ORDER NO. BSD0303M605

Service Manual

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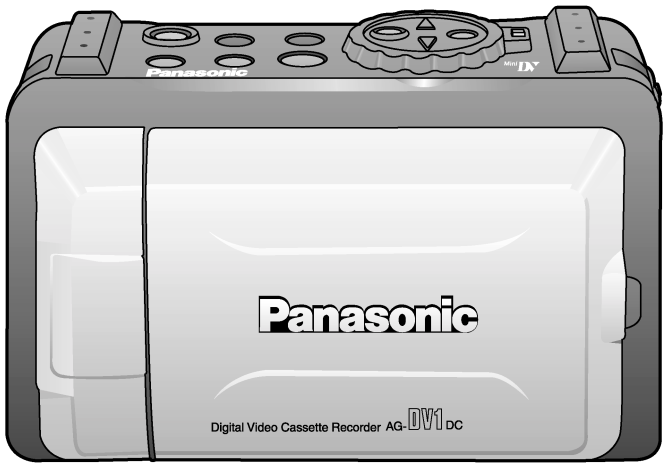
Mini DV

Digital Video Cassette Recorder

AG-DV1DCE



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⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Specifications

Power Source:	Digital Video Cassette Recorder : Input 7.9 V DC AC Adaptor: Input 100 - 240 V AC, 50/60 Hz, Output 7.9 V DC Battery: Lithium-Ion Type Output DC 7.2 V
Power Consumption:	Digital Video Cassette Recorder : 7.2 V/7.9 V DC 4.5 W (Rec mode) (MAX 6.5 W: Rew mode) AC Adaptor : 20 W
Digital Interface:	DV Input/Output Terminal (IEEE1394, 4-pin)
Video Signal:	EIA Standard (625 lines, 50 fields) PAL colour signal
Video Recording System:	2 rotary heads, helical scanning system
Video Output Level:	1.0 Vp-p, 75 ohm
S-Video Output Level:	Y Output: 1.0 Vp-p, 75 ohm C Output: 0.3 Vp-p, 75 ohm
Video Input Level:	1.0 Vp-p, 75 ohm
S-Video Input Level:	Y Input: 1.0 Vp-p, 75 ohm C Input: 0.3 Vp-p, 75 ohm
Audio:	12 bit (32 kHz) 4 tracks 16 bit (48 kHz) 2 tracks
Audio Output Level (Line):	-10 dBV Output Impedance 1 kohm Load Impedance 10 kohm
Audio Input Level (Line):	-10 dBV Input Impedance 47 kohm
Audio Input Level (Mic):	-70 dBV Input Impedance 5600 ohm Mic sensitivity -50 dB
LCD Monitor:	88.9 mm (3.5 inch) Liquid Crystal Display
Operating Temperature:	0 °C~40 °C
Operating Humidity:	10 %~75 %
Weight:	Digital Video Cassette Recorder : 0.5 kg AC Adaptor : 0.16 kg
Dimensions:	Digital Video Cassette Recorder : 143 (W) x 94.5 (H) x 69.7 (D) mm AC Adaptor : 70 (W) x 45 (H) x 115 (D) mm

Weight and dimensions shown are approximate.
Designs and specifications are subject to change without notice.

SAFETY PRECAUTIONS

GENERAL GUIDELINES

1. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been over-heated or damaged by the short circuit.
2. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
3. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.

LEAKAGE CURRENT COLD CHECK

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. Measure the resistance value, with an ohm meter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. The resistance value must be more than 5MΩ.

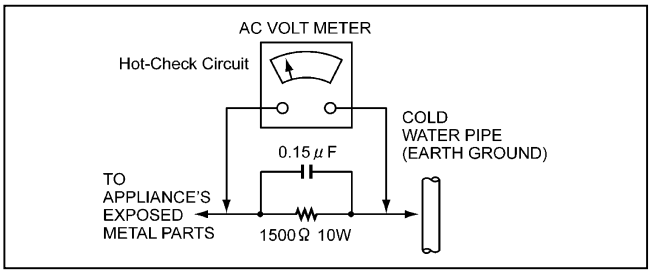


Figure1

LEAKAGE CURRENT HOT CHECK (See Figure 1)

1. Plug the AC cord directly into the AC outlet.
   Do not use an isolation transformer for this check.
2. Connect a 1.5KΩ, 10W resistor, in parallel with a 0.15μ F capacitor, between each exposed metallic part on the set an a good earth ground such as a water pipe, as shown in Figure1.
3. Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet repeat each of the above measurements.
6. The potential at any point should not exceed 0.15 volts RMS. A leakage current tester (Simpson Model 229 equivalent) may be used to make the hot checks, leakage current must not exceed 0.1 milliamp. In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

ABOUT LEAD FREE SOLDER (PbF)

Distinction of Pbf PCB:
PCBs (manufactured) using lead free solder will have a PbF stamp on the PCB.
Caution:

1. Pb free solder has a higher melting point than standard solder; Typically the melting point is 50–70˚F (30-40˚C) higher. Please use a high temperature soldering iron. In case of the soldering iron with temperature control, please set it to 700±20˚F (370±10˚C).
2. Pb free solder will tend to splash when heated too high (about 1100˚F/600˚C).

ELECTROSTATICALLY SENSITIVE (ES) DEVICES

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically sensitive (ED) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground.
   Alternatively, obtain and wear a commercially available discharging wrist trap device, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as alminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static solder removal device classified as "anti-static" can generate electrical charges sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it.
   (most replacement ES devices are package with leads electrically shorted together by conductive foam, alminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.
   CAUTION : Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise hamless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device).

X-RADIATION

WARNING

1. The potential source of X-radiation in EVF sets is the High Voltage section and the picture tube.
2. When using a picture tube test jig for service, ensure that jig is capable of handling 10kV without causing X-Radiation.

Note : It is important to use an accurate periodically calibrated high voltage meter.

3. Measure the High Voltage. The meter (electric type) reading should indicate 2.5kV,±0.15kV. If the meter indication is out of tolerance, immediate service and correction is required to prevent the possibility of premature component failure. To prevent an X-Radiation possibility, it is essential to use the specified picture tube.

Dear Customer,

We would like to take this opportunity to thank you for purchasing this Panasonic Digital Video Cassette Recorder. Please read these Operating Instructions carefully and keep them handy for future reference.

Information for Your Safety

WARNING
TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD AND ANNOYING INTERFERENCE, USE ONLY THE RECOMMENDED ACCESSORIES AND DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE. DO NOT REMOVE THE COVER (OR BACK); THERE ARE NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

Carefully observe copyright laws. Recording of pre-recorded tapes or discs or other published or broadcast material for purposes other than your own private use may infringe copyright laws. Even for the purpose of private use, recording of certain material may be restricted.

- Please note that the actual controls and components, menu items, etc. of your Digital Video Cassette Recorder may look somewhat different from those shown in the illustrations in these Operating Instructions.
- Other names, company names, and product names printed in these instructions are trademarks or registered trademarks of the companies concerned.

CAUTION

Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type recommended by the manufacturer.
Dispose of used batteries according to the manufacturer's instructions.

THE SOCKET OUTLET SHOULD BE INSTALLED NEAR THE EQUIPMENT AND SHOULD BE EASILY ACCESSIBLE.

As this equipment gets hot during use, operate it in well ventilated place; do not install this equipment in a confined space such as a bookcase or similar unit.
To reduce the risk of fire, electric shock or product damage, do not expose this equipment to rain, moisture, dripping or splashing and ensure that no objects filled with liquids, such as vases, shall be placed on the equipment.

Digital Video Cassette Recorder

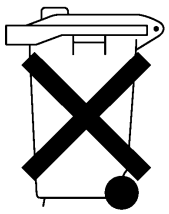
- The rating plate is on the underside of the Digital Video Cassette Recorder.

AC Adaptor

- The rating plate is on the underside of the AC Adaptor.
- Disconnect the AC mains plug from the AC mains socket when not in use.

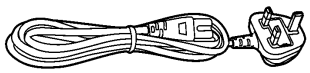
Attention/Attentie

- Batteries are used for the main power source and memory back-up in the product. At the end of their useful life, you should not throw them away. Instead, hand them in as small chemical waste.
- Voor de primaire voeding en het reservegeheugen van het apparaat wordt gebruikgemaakt van een batterij.
  Wanneer de batterij is uitgeput, mag u deze niet gewoon weggooien, maar dient u deze als klein chemisch afval weg te doen.



Caution for AC Mains Lead

FOR YOUR SAFETY PLEASE READ THE FOLLOWING TEXT CAREFULLY.
This product is equipped with 2 types of AC mains cable. One is for continental Europe, etc. and the other one is only for U.K.
Appropriate mains cable must be used in each local area, since the other type of mains cable is not suitable.

FOR CONTINENTAL EUROPE, ETC.	**FOR U.K. ONLY**
Not to be used in the U.K.	If the plug supplied is not suitable for your socket outlet, it should be cut off and appropriate one fitted. 

FOR U.K. ONLY

This appliance is supplied with a moulded three pin mains plug for your safety and convenience.
A 5 amp fuse is fitted in this plug.
Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5 amp and that it is approved by ASTA or BSI to BS1362.
Check for the ASTA mark ASA or the BSI mark on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.
If you lose the fuse cover the plug must not be used until a replacement cover is obtained.
A replacement fuse cover can be purchased from your local Panasonic Dealer.

IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OF SAFELY. THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13 AMP SOCKET.

If a new plug is to be fitted please observe the wiring code as shown below.
If in any doubt please consult a qualified electrician.

WARNING : THIS APPLIANCE MUST BE EARTHED.

IMPORTANT : The wires in this mains lead are coloured in accordance with the following code:

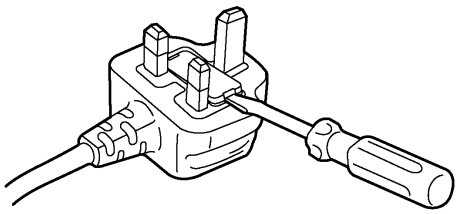
Green-and-Yellow:	Earth
Blue:	Neutral
Brown:	Live

As the colours of the wires in the mains lead of this appliance may not correspond with the coloured mark-ings identifying the terminals in your plug, proceed as follows:

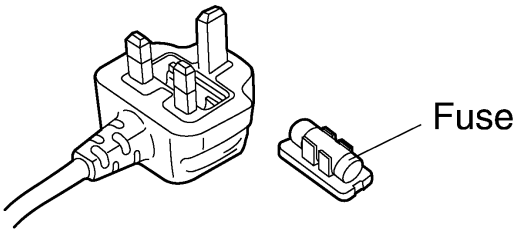
- The wire which is coloured GREEN-AND-YELLOW must be connected to the terminal in the plug which is marked with the letter E or by the Earth symbol ⏚ or coloured GREEN or GREEN-AND-YELLOW.
- The wire which is coloured BLUE must be connected to the terminal in the plug which is marked with the letter N or coloured BLACK.
- The wire which is coloured BROWN must be con-nected to the terminal in the plug which is marked with the letter L or coloured RED.

How to replace the fuse

1. Open the fuse compartment with a screwdriver.



2. Replace the fuse.



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SECTION 2

DISASSEMBLY / ASSEMBLY PROCEDURES

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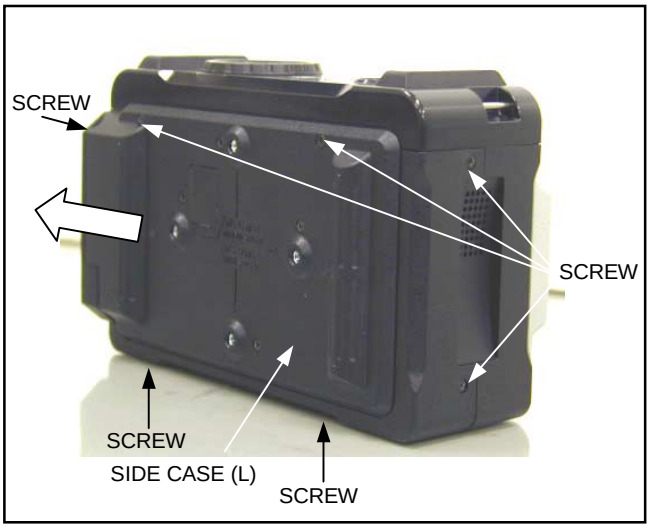
2 DISASSEMBLY/ ASSEMBLY PROCEDURES

2.1. Removal of the Side Case (L)

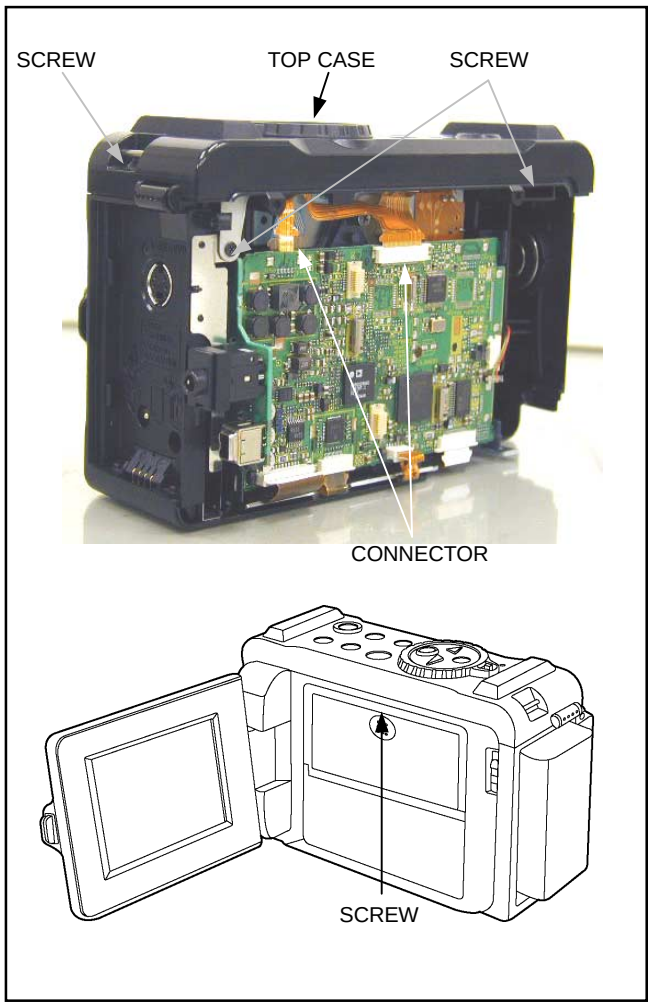
1. Pull out the Jack Cover.

2. Unscrew the 7 screws and remove the Side Case (L).



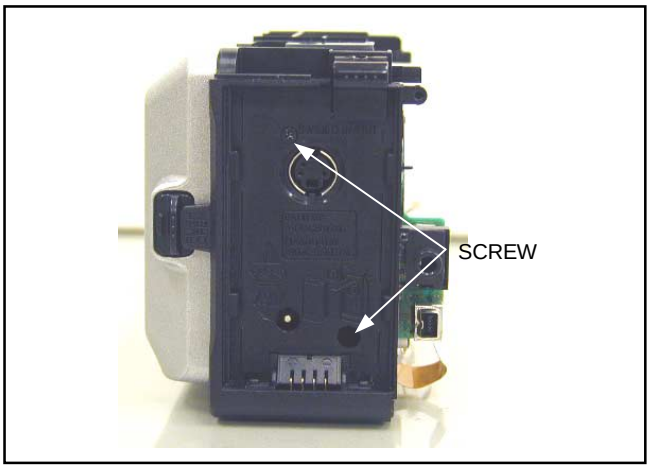
2.2. Removal of the Top Case

1. Remove the Side Case (L).
2. Disconnect the 2 connectors.
3. Unscrew the 4 screws and remove the Top Case.

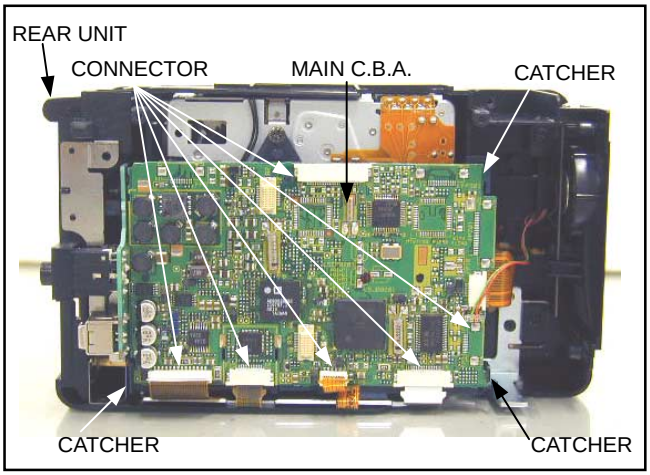


2.3. Removal of the MAIN C.B.A. / Rear Unit

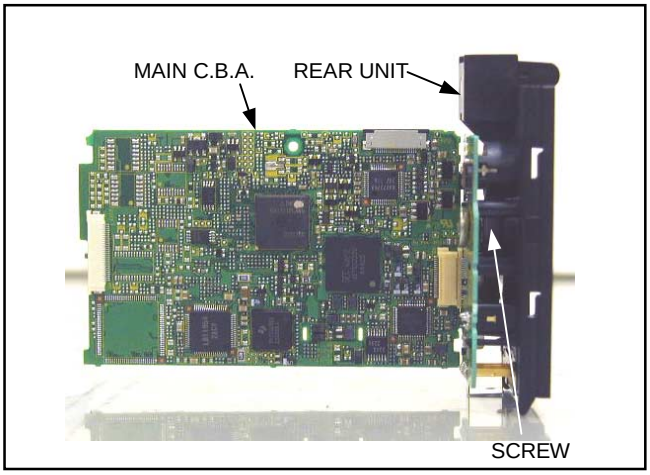
1. Remove the Side Case (L).
2. Remove the Top Case.
3. Unscrew the 2 screws.



4. Disconnect the 6 connectors.
5. Remove the Main C.B.A. from the 3 catchers and pull out the Main C.B.A. together with Rear Unit.

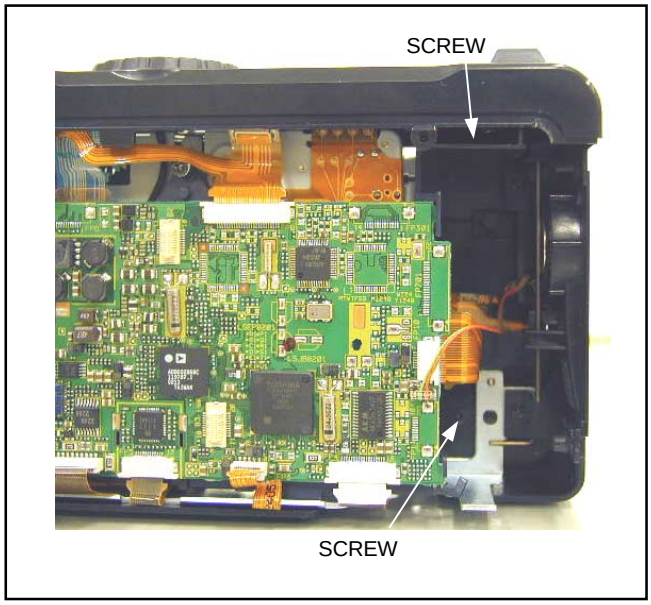


6. Unscrew the 1 screw and remove the Rear Unit.

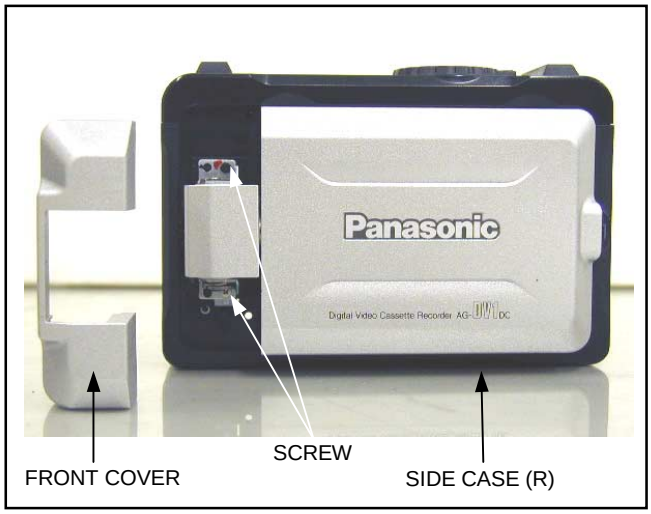


2.4. Removal of the Side Case (R)

1. Remove the Side Case (L).
2. Unscrew the 2 screws.

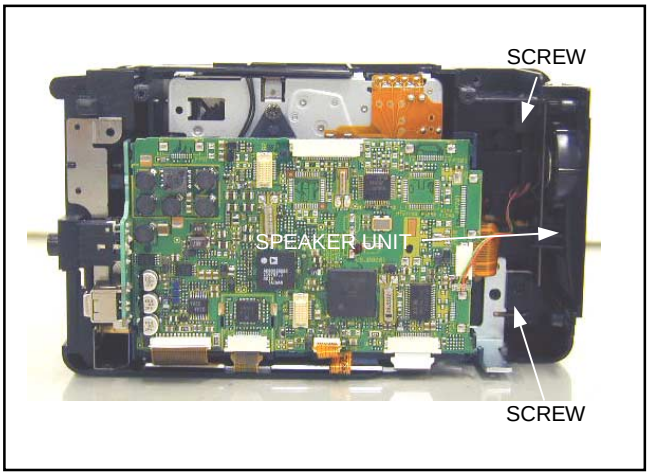


3. Remove the Front Cover.
4. Unscrew the 2 screws and remove the Side Case (R).



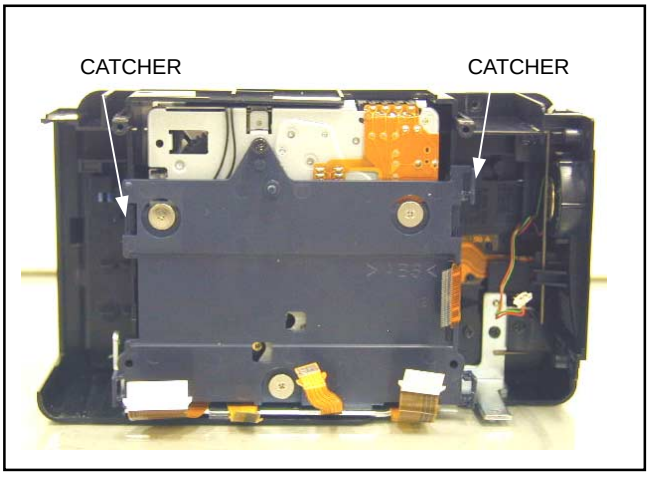
2.5. Removal of the Speaker Unit

1. Remove the Side Case (L).
2. Unscrew the 2 screws and remove the Speaker Unit.



2.6. Removal of the Mechanism Unit.

1. Remove the Side Case (L).
2. Remove the Top Case.
3. Remove the Main C.B.A. and Rear Unit.
4. Remove the Mechanism Unit from the 2 catchers.



2.7. MECHANISM SECTION

This procedure starts with the condition that the cabinet parts and Main C.B.A. have been removed.
When reassembling, perform the step(s) in the reverse order.
Perform all disassembly/reassembly and alignments procedures in STOP Position except disassembly/reassembly and alignment procedures which have the special Notes.

STEP LOC. No.	Prior Step (s)	Part	Fig. No.	Remove	Alignment /Adjustment
①	-----	Mechanism Base Unit	DM3	3(413), (503), (L-1), Grounding Plate, Hooking Portions	
②	-----	Guide Piece L	DM4	(478), (L-2)	
③	-----	Guide Piece R	DM4	(478), (L-2)	
④	2,3	Garage Unit	DM4		
⑤	-----	Cylinder Unit	DM5	3(503)	Adjustment
⑥	2,3,4	Damper Unit	DM6	(504)	
⑦	1	DEW Sensor/ DEW Cable	DM7	Unsolder	
⑧	1,7	Mechanism F.P.C. Unit	DM8	2(479), 4(L-3), Unsolder	
⑨	-----	Reduction Gear B	DM9	(477)	
⑩	2,3,4	Mechanism Cover Unit	DM10	(432), (L-4), (475)	
⑪	2,3,4,10	Idler Arm Unit	DM11		
⑫	2,3,4,10,11	Center Gear	DM11		
⑬	2,3,4	Tension Arm Unit	DM12	(477)	Adjustment
⑭	2,3,4,13	S Reel Table	DM13	(475)	
⑮	2,3,4,	T Reel Table	DM13	(475)	
⑯	-	Not used	-	-	
⑰	2,3,4	T Brake Unit	DM15	(L-5), Screw, Plate	
⑱	-	Not used	-	-	
⑲	2,3,4	Pinch Arm Unit	DM16	(473), Hooking Portions	Adjustment
⑳	5,9,13,19	Rail	DM17	(473), (L-6), 4(L-7)	
㉑	5,9,13,19,20	Cylinder Base Unit	DM18	3(432)	Adjustment
㉒	5,9,13,19,20	S Arm Unit	DM19		Gear Alignment
㉓	5,9,13,19,20,22	T Arm Unit	DM19		Gear Alignment
㉔	5,9,13,19,20,22	S Post Unit	DM19		Adjustment
㉕	5,9,13,19,20,22,23,24	T Post Unit	DM19		Adjustment
㉖	5,9,13,19,20,21,22	Loading Motor Unit	DM20	2(429)	
㉗	2,3,4,10,11,12,13,14,15	Sensor F.P.C.	DM21	2(432)	
㉘	2,3,4,10,11,12,13,14,15,27	Tension Drive Arm	DM22		
㉙	2,3,4,10,11,12,13,14,15,27,28	S Brake Drive Lever	DM22		
㉚	2,3,4,10,11,12,13,14,15,27,28,29	Cam Gear	DM23		Gear Alignment
㉛	2,3,4,10,11,12,13,14,15,19,27	Pinch Drive Arm	DM24		
㉜	2,3,4,5,9,10,11,12,13,14,15,19,20,22,23,24,25,27,28,29,30	Intermediate Gear	DM24		Gear Alignment
㉝	1,2,3,4,5,7,8,9,10,11,12,13,14,15,19,20,21,22,23,24,25,27,28,29,30	Mode Switch	DM25	(432)	Gear Alignment
㉞	1,2,3,4,7,8	MIC Switch	DM26	(432)	
㉟	2,3,4,10,11,12,13,14,15,17,19,27,28,29,30,31	Main Plate Unit	DM27		Gear Alignment
㊱	2,3,4,10,11,12,13,14,15,17,19,27,28,29,30,31,35	T4 Drive Arm	DM28		
㊲	2,3,4,10,11,12,13,14,15,17,19,27,28,29,30,31,35,36	Drive Pulley	DM29		
㊳	2,3,4,5,6,9,10,11,12,13,14,15,17,19,20,21,22,23,24,25,27,28,29,30,31,35,36,37,39	Capstan Unit	DM30	(471), 2(432)	Adjustment
㊴	2,3,4,5,6,9,10,11,12,13,14,15,17,19,20,21,22,23,24,25,27,28,29,30,31,35,36,37,38	Timing Belt	DM30		
㊵	2,3,4,5,6,9,10,11,12,13,14,15,17,19,20,21,22,23,24,25,27,28,29,30,31,35,36,37,38,39	Capstan Adjust Spring	DM30		
㊶	1,2,3,4,7,8,34	Lock Lever Unit	DM31	2(473), Hooking Portion	
㊷	1,2,3,4,7,8,34,41	Lock Pick Lever	DM31		

A B C D E F

How to read chart shown above:

A: Order of Procedure steps.
When reassembling, perform steps(s) in reverse order.
These numbers are also used as the identification (location) No. of parts in Figures.
B: Steps to be completed prior to the current step.
C: Part to be removed or installed.
D: Fig. No. showing Procedure or Part Location.
E: Identification of part to be removed, unhooked, unlocked, released, unplugged, unclamped, or unsoldered.
2(478)= 2 Screws (478), 2(L-1) =2 Looking Tabs (L-1)
F: Alignment/ Adjustment which is required when installing or replacing each parts.

CAUTION:

a. Use a wrist strap to provide ESD protection while disassembling or assembling.
b. Removed Cut Washer is not reusable. If removed, install a new one.
Following Cut Washers are to be used:

Ref. No.	Part No.
(473)	VMX2026
(475)	VMX2750
(477)	VMX2028

2.7.1. Regular Maintenance

The purpose of periodic maintenance is to preserve the functioning throughout its useful life.

The user or service dealer should perform these maintenance regularly to ensure that maximum utility is obtained from the machine.

The VCR is complicated place of equipment. It contains many belts, rollers, heads etc., which become worn, and deteriorate as time goes by, causing trouble. Dust and dirt will also impede the proper functioning of the machine. In light of this, t is very important that overall maintenance be done according to the maintenance chart to maintain the functions of the VCR, and to avoid accidental problems. This maintenance should also be performed after any repairs are done on the equipment. The VCR used for business applications requires particular attention for several reasons. The installation conditions and applications are not always the best. Long use times, or poor environmental conditions may adversely affect the life span and performance of the machine. Regular maintenance assures that the purchaser obtains the maximum value for his expenditure. Accordingly, the necessity of regular maintenance should be fully explained at the time of sale, as well as during after-sale repairs.

2.7.1.1. MAINTENANCE CHART

The following periodic maintenance is required to maintain AG-DV1DCE in good condition.

No.	Part Name	Part No.	Cleaning	Replacement	Remark
	Tape Transport Part	-----	100 hours	-----	*1
1	CYLINDER UNIT	LSEG0083	100 hours	500 hours	
2	TIMING BELT	LSDV0012		500 hours	
3	DRIVE PULLY	LSDG0095		500 hours	
4	CENTER GEAR	LSDG0096		500 hours	
5	IDLER ARM UNIT	VXLS1084		500 hours	
6	S REEL TABLE	LSXR0002		500 hours	
7	T REEL TABLE	LSXR0003		500 hours	
8	T BRAKE UNIT	LSXL0085		500 hours	
9	LOADING MOTOR ASS'Y	LSEM0087		500 hours	
10	REDUCTION GEAR B	LSDG0092		500 hours	
11	CAM GEAR	LSDG0093		500 hours	
12	INTERMEDIATE GEAR	LSDG0094		500 hours	
13	CYLINDER BASE ASS'Y	LSXD0017		500 hours	
14	PINCH ARM UNIT	VXLS1123		500 hours	
15	TENSION ARM UNIT	VXLS1116		500 hours	

Note;

Using hours are based on the head rotation hours.(No hour meter in this Camera Recorder.)

Using hours are recommendation. It may depend on temperature, humidity, quality of tape or dust condition.

Using hours are listed as the reference of maintenance. They do not mean guarantee hours.

*1 Tape transport parts mean following parts.

(Tension Post, S3 Post, S2 Post, S1Roller, Cylinder & Heads,T1 Roller, T2 Post, Capstan Shaft, Pinch Roller and T3 Post)

2.7.2. Inner Parts Location

Note: BOX indicates alignment (Gear alignment or Tape Path Alignment with L.I.S.T.A.) required when a part is replaced.

2.7.2.1. TOP VIEW

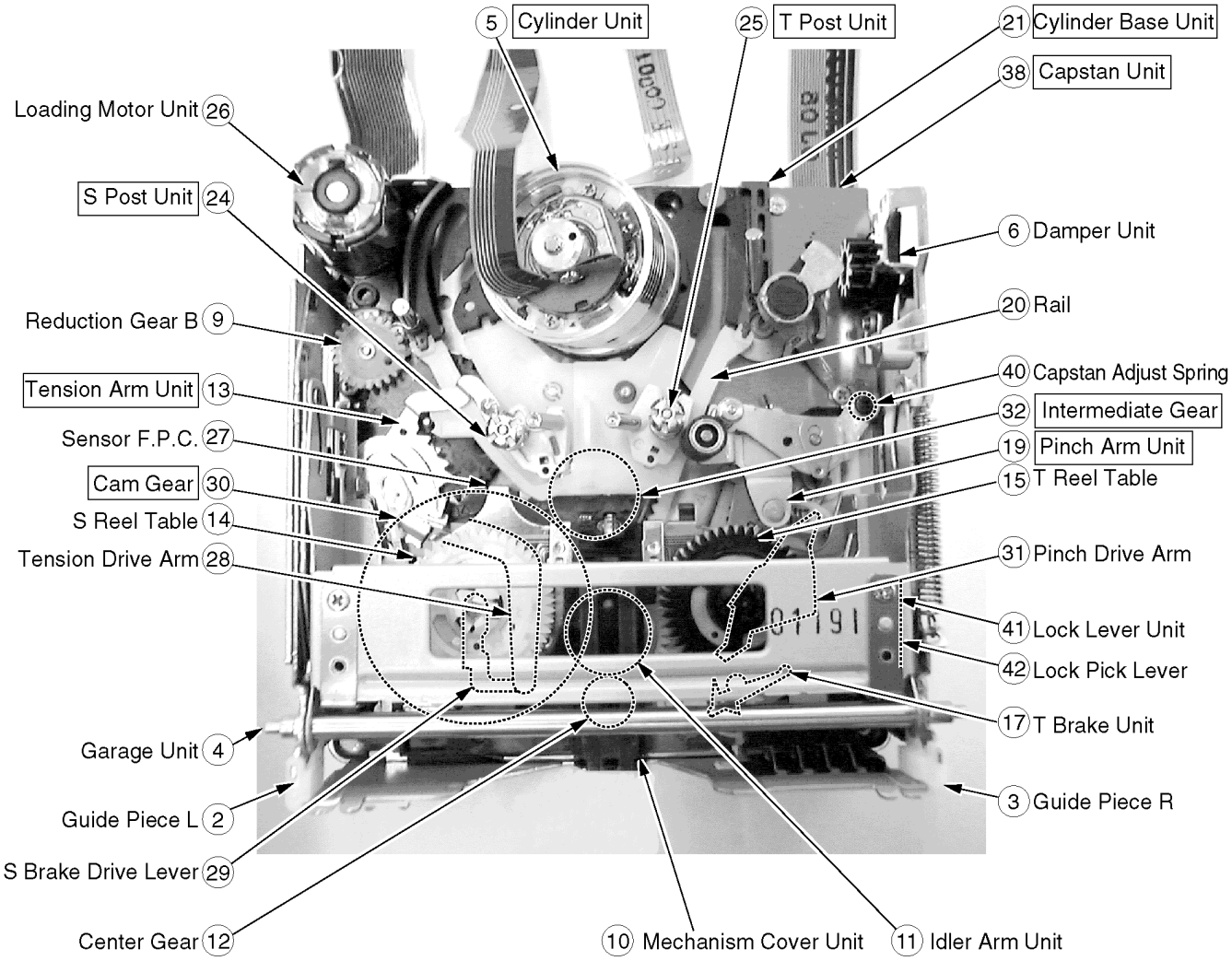


Fig. DM1-1

2.7.2.2. BOTTOM VIEW

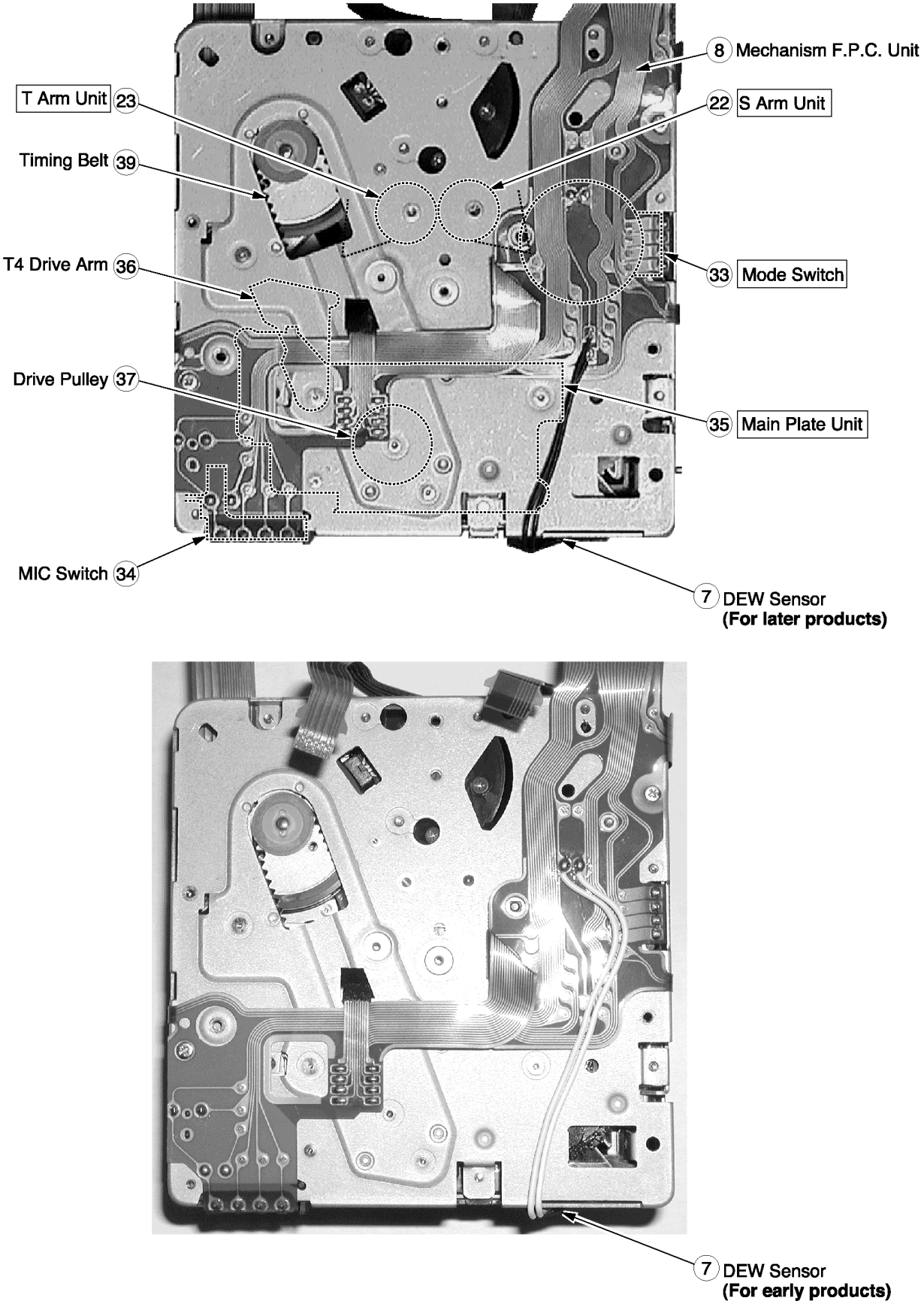


Fig. DM1-2

2.7.3. STOP Position Confirmation

Check the following points to confirm that the Mechanism is in STOP Position from the top side.

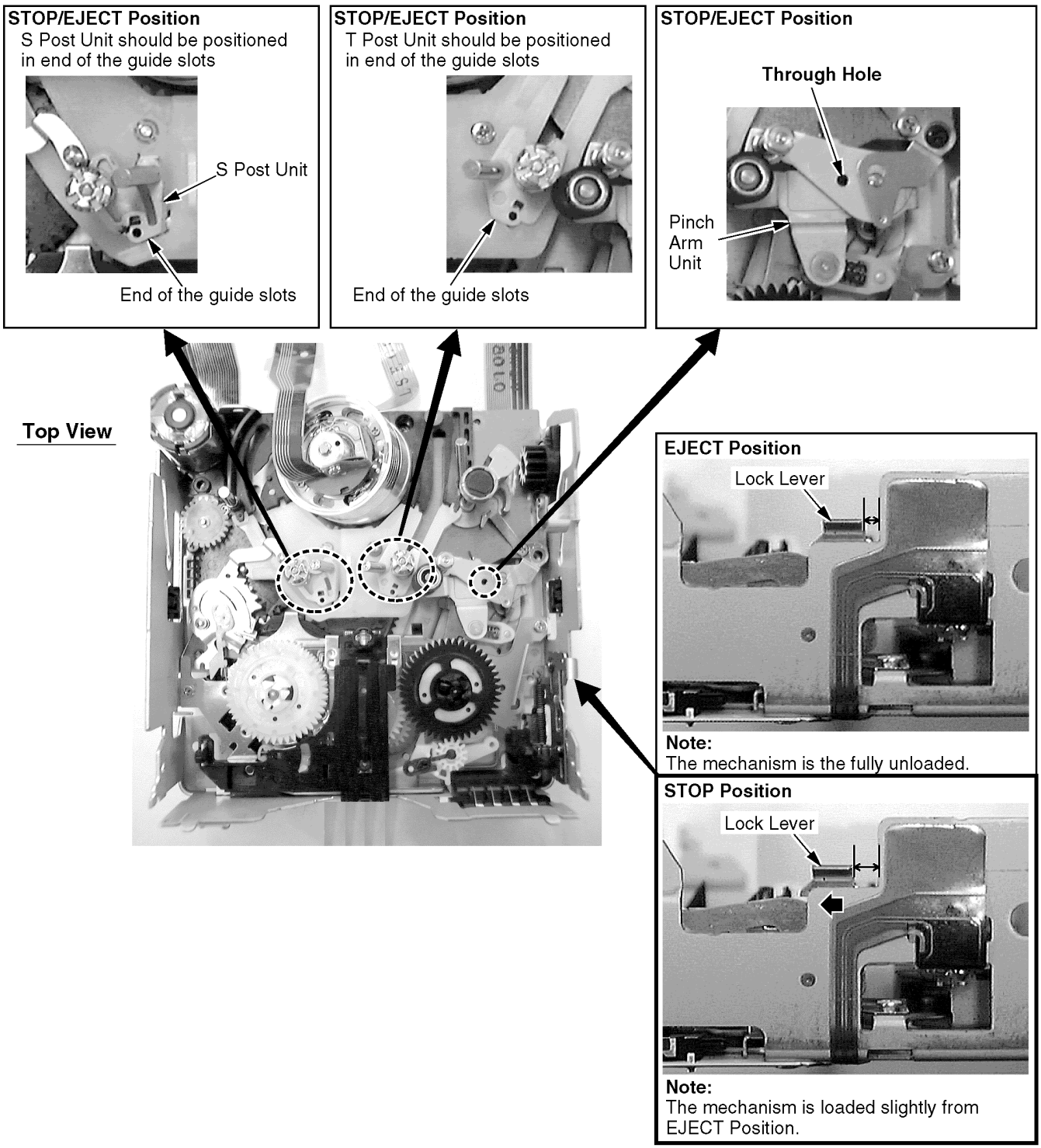
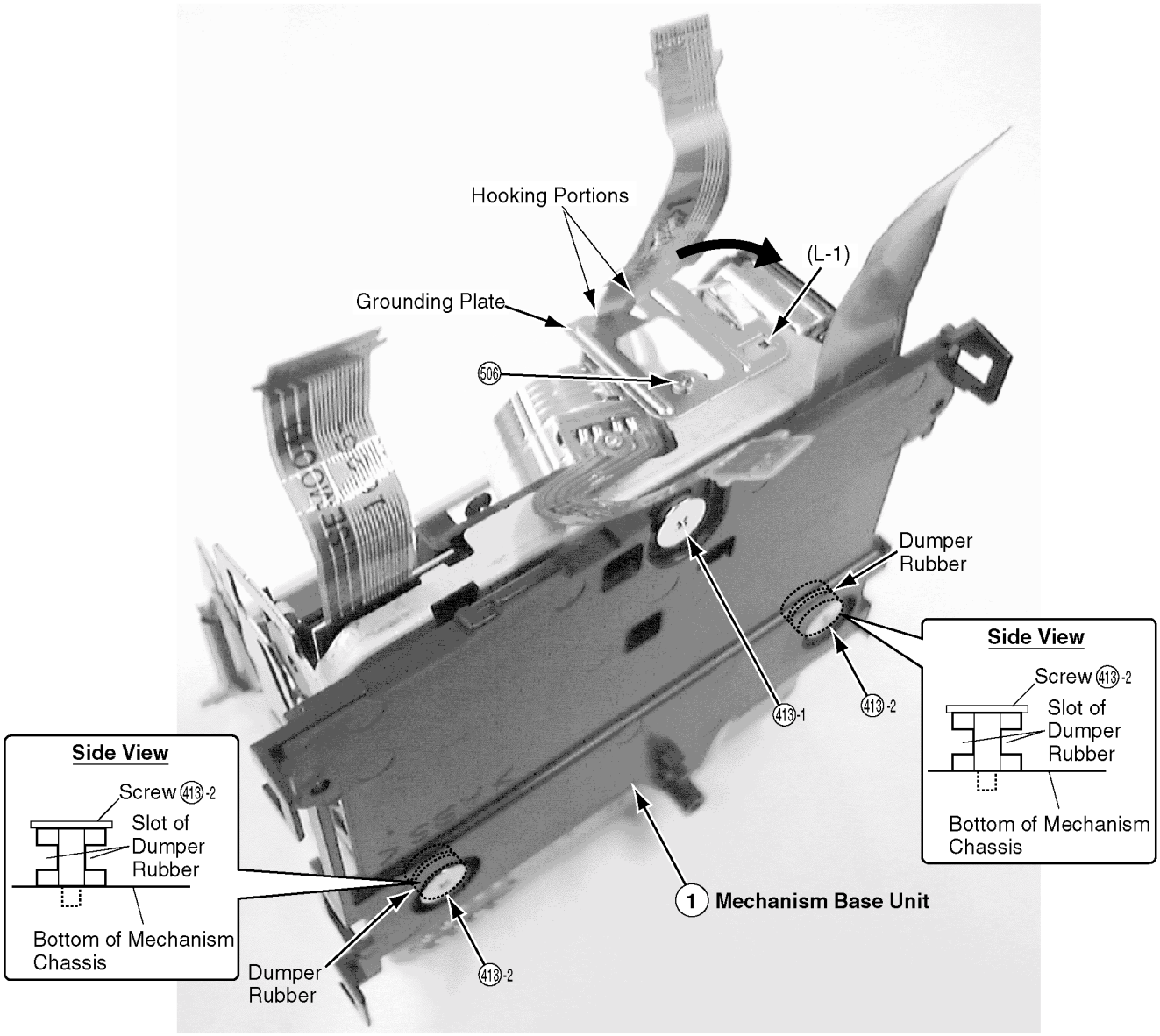


Fig. DM2

Perform all disassembly/reassembly and alignments procedures in STOP Position except disassembly/reassembly and alignment procedures which have the special notes.

2.7.4. Mechanism Base Unit

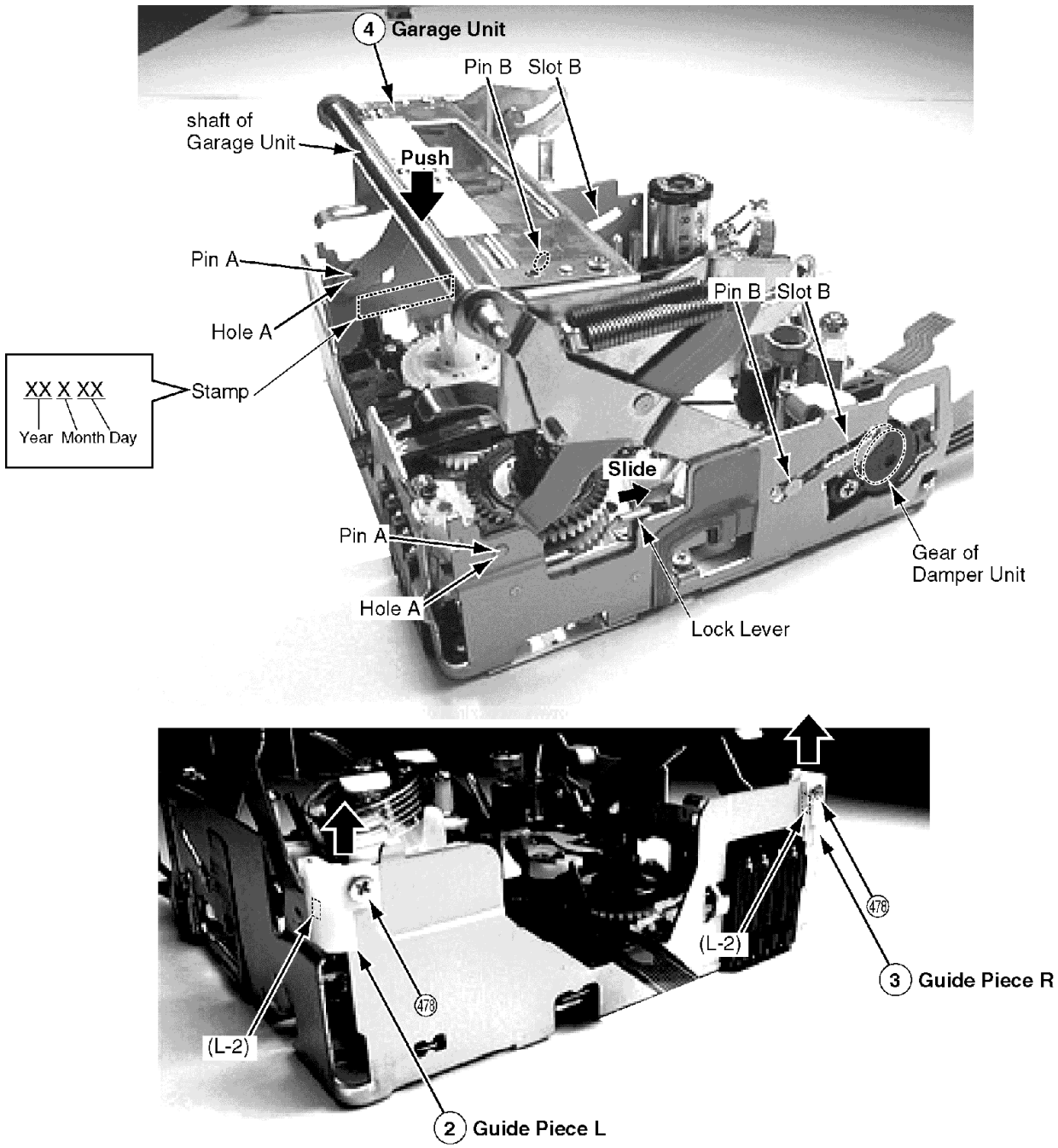


Disassembly Notes:
1. Use extreme care when removing the Grounding Plate. Do not touch the Video Heads during servicing.
2. When removing the Grounding Plate from the Mechanism Chassis, turn it as indicated by the arrow.

Reassembly Notes:
1. **Installation of Mechanism Base Unit**
1) Install the 2 Screws 413-2 on the Mechanism Chassis.
2) Then, install the Mechanism Base Unit so that it slide to slots of the Dumper Rubber.
3) Then, install a Screw 413-1.

Fig. DM3

2.7.5. Guide Piece L, Guide Piece R, Garage Unit



Disassembly Notes:

1. Before removing the Garage Unit, eject the Garage Unit by sliding the Lock Lever to the direction of the arrow.
2. When removing the Garage Unit, pull 2 Pin A from 2 Hole A, and then pull 2 Pin B from 2 Slot B.

Reassembly Notes:

1. Installation of Garage Unit

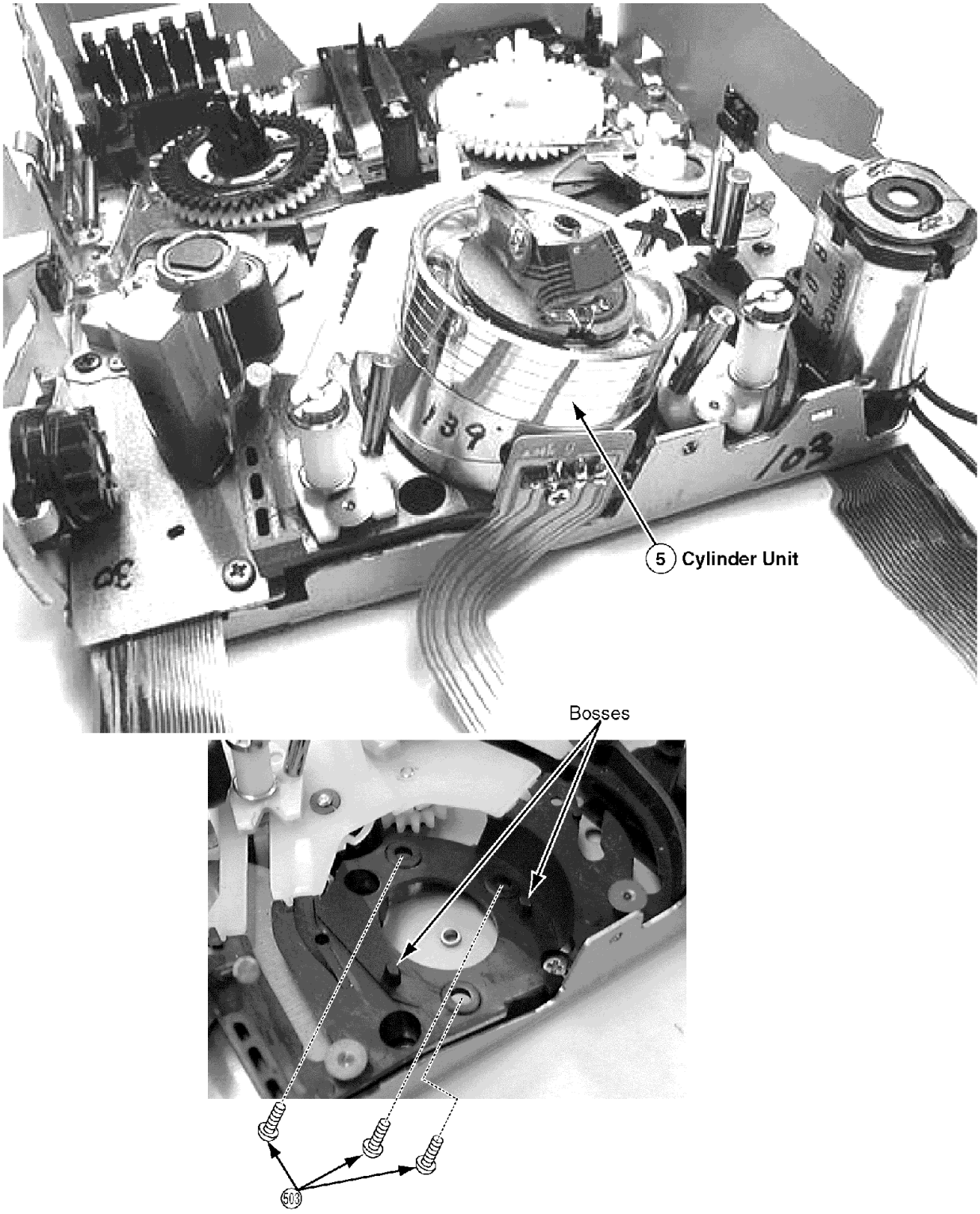
1) Install the Garage Unit so that 2 Pin B of Garage Unit are inserted to 2 Slot B on chassis.
2) Insert the 2 Pin A to 2 Hole A on chassis.

CAUTION:

When making the Garage Unit in the down position, be sure to push the shaft of Garage Unit as shown. Otherwise, the Garage Unit may be damaged.

Fig. DM4

2.7.6. Cylinder Unit



Disassembly Notes:

1. Use extreme care when removing or replacing the Cylinder Unit. Do not touch the Video Heads during servicing. Use extreme care to handle the Cylinder Unit.

Reassembly Notes:

1. Installation of Cylinder Unit

1) Install the Cylinder Unit so that 2 Holes on the Cylinder Unit surface fit over the 2 Bosses on the Chassis. Then, tighten 3 Screws (503).

Fig. DM5

2.7.7. Dumper Unit

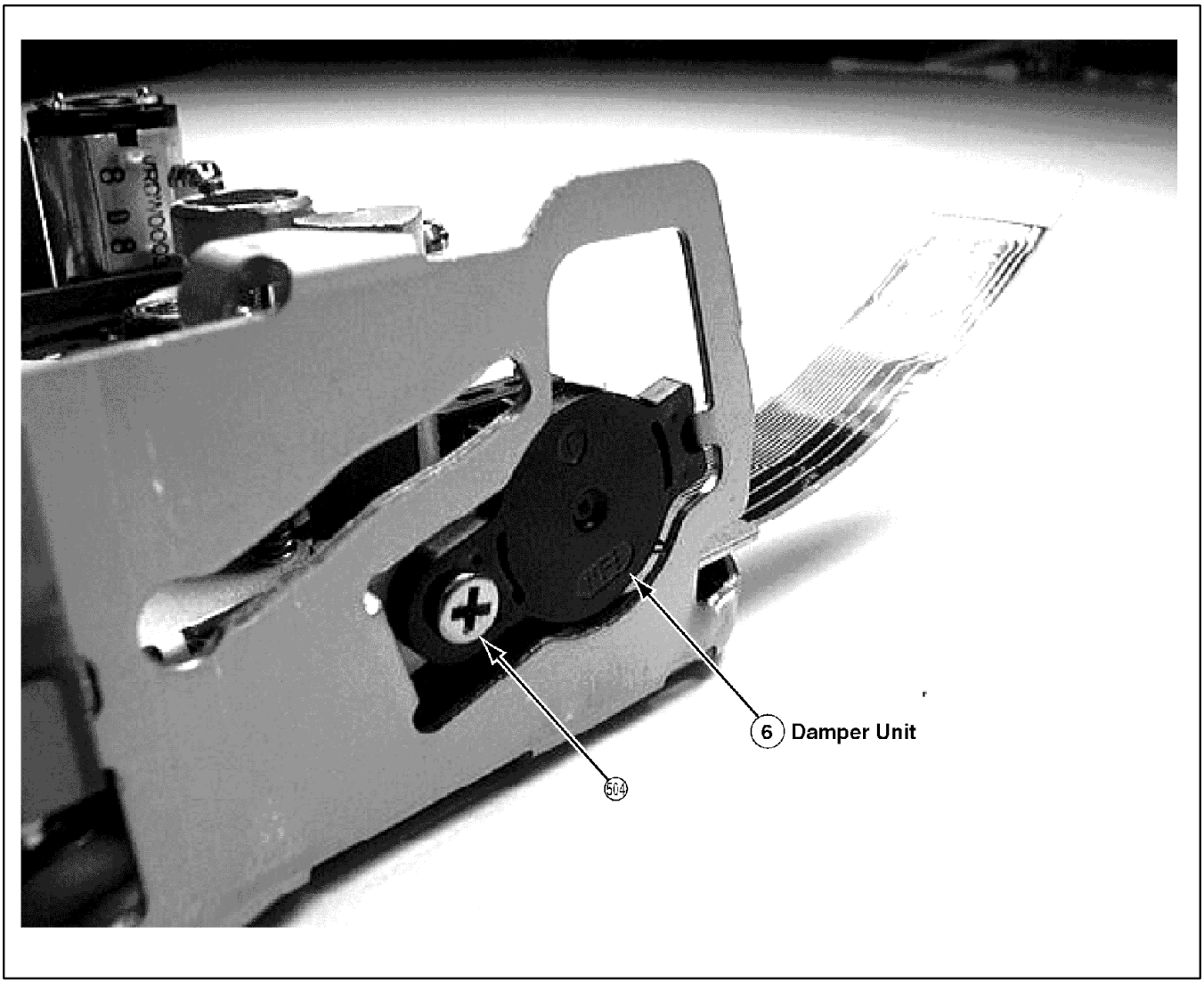
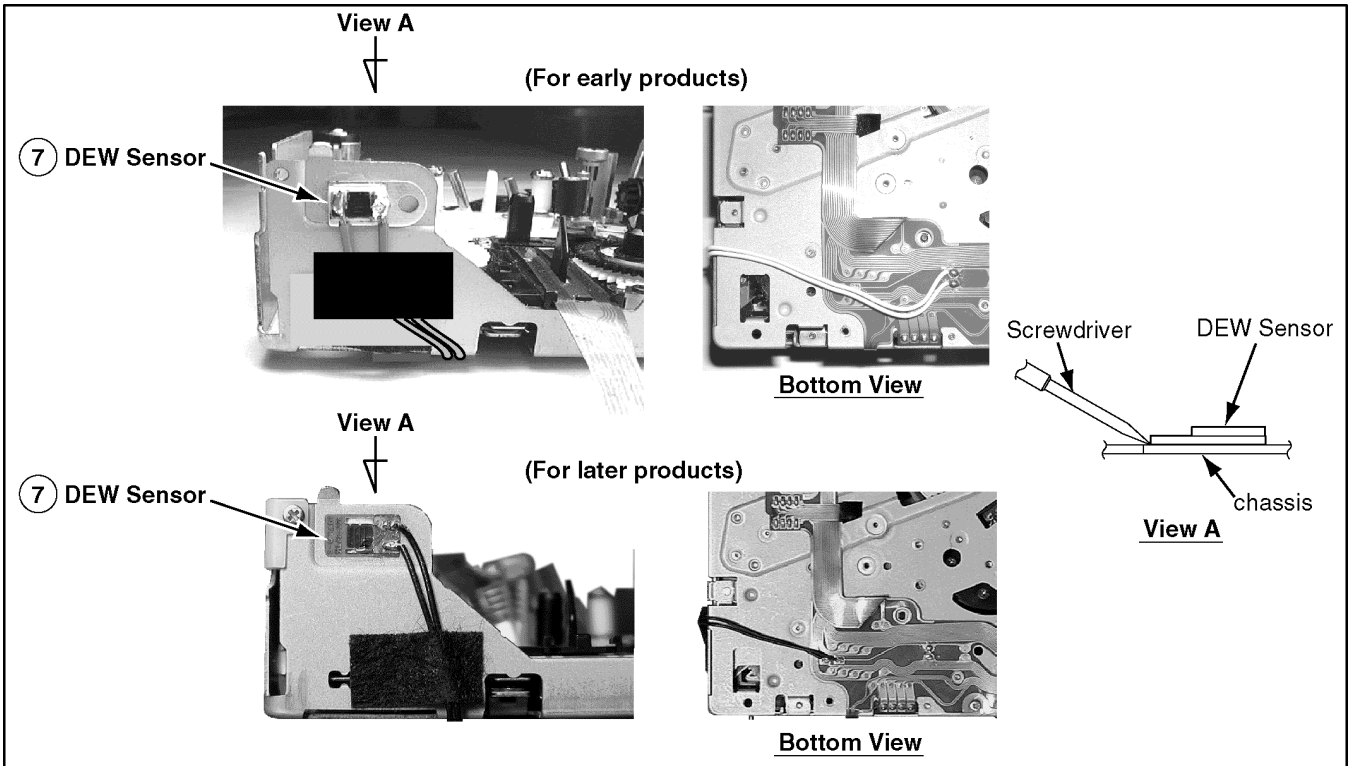
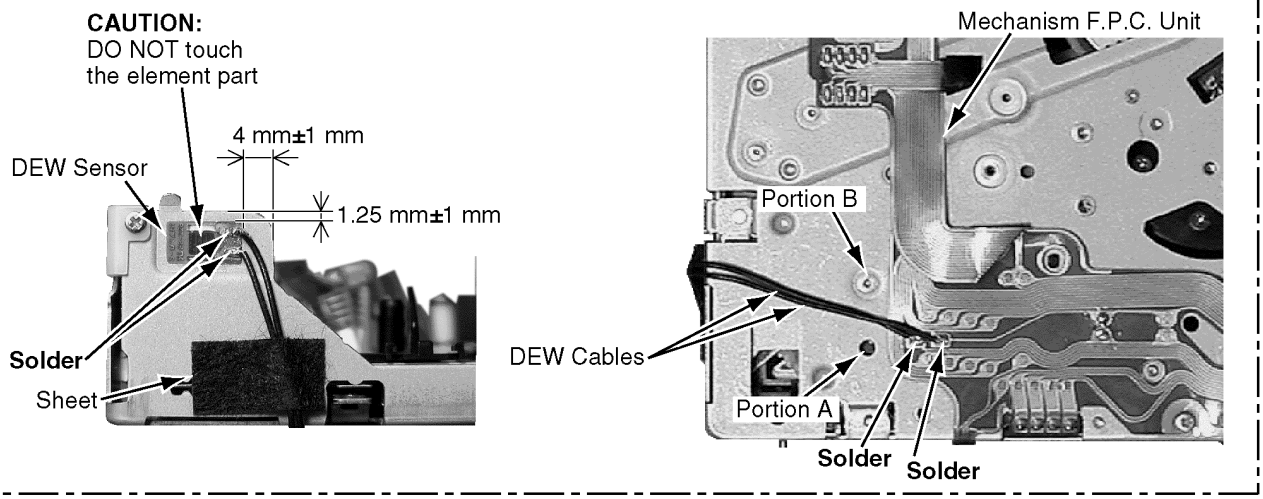


Fig. DM6

2.7.8. DEW Sensor, DEW Cable



See Reassembly Notes.



Disassembly Notes:

1. When removing the DEW Sensor, remove it using a screwdriver etc. as shown.

Reassembly Notes:

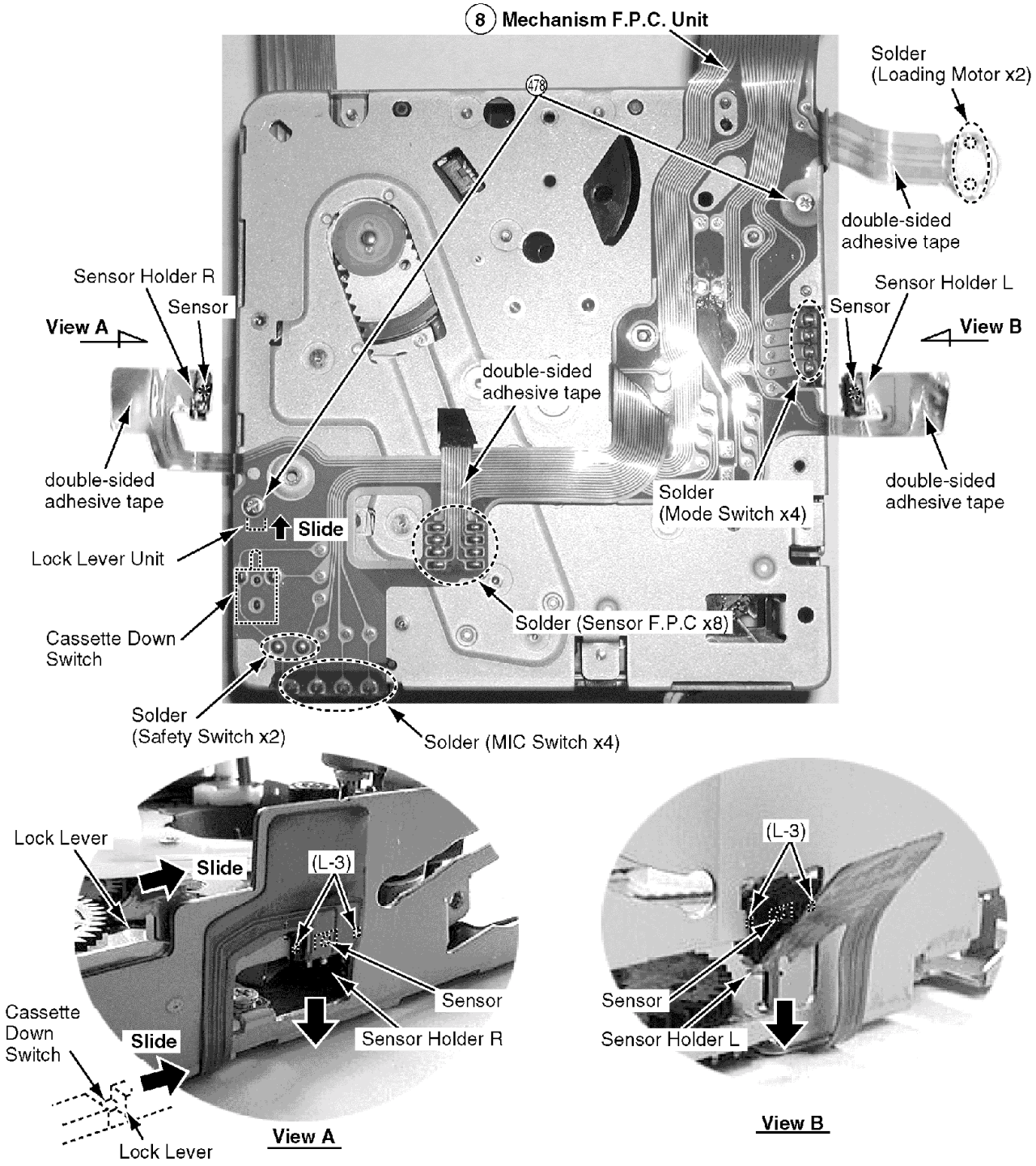
1. Installation of DEW Sensor, DEW Cables

The DEW Sensor or the DEW Cables is supplied separately as replacement parts. When replacing the DEW Sensor **in early products**, be sure to replace both the DEW Sensor and the DEW Cables.
DO NOT touch the element part on DEW Sensor when installing it.

1) Put the DEW Sensor on chassis with adhesive securely, and solder the DEW Cables on the DEW Sensor as shown.
2) Shape the DEW Cables between Portion A and Portion B on the bottom of Mechanism. Then, solder it on the Mechanism F.P.C. Unit no more than 320 °C for less than 3 seconds as shown.

Fig. DM7

2.7.9. Mechanism F.P.C. Unit



Disassembly Notes:

1. DO NOT touch the Sensor on Sensor Holder Unit when removing.
2. When removing the Sensor Holder L & R, slide the Sensor Holder Unit as indicated by the arrow while releasing the 4 Locking Tabs (L-3).

Reassembly Notes:

1. Before installing the Mechanism F.P.C. Unit, confirm that the Lock Lever is slid as indicated by the arrow and held as shown. Otherwise, the Lock Lever may damage the Cassette Down Switch.
2. Solder the points on Sensor F.P.C. x8, MIC Switch x4, Mode Switch x4, Safety Switch x2, and Loading Motor x2 no more than 310 ℃ for less than 2 seconds when soldering.
3. When installing the Mechanism F.P.C. Unit, secure the Sensor Holder L & R with the 4 Locking Tabs (L-3), and then put with double-sided adhesive tape.

Fig. DM8

2.7.10. Reduction Gear B

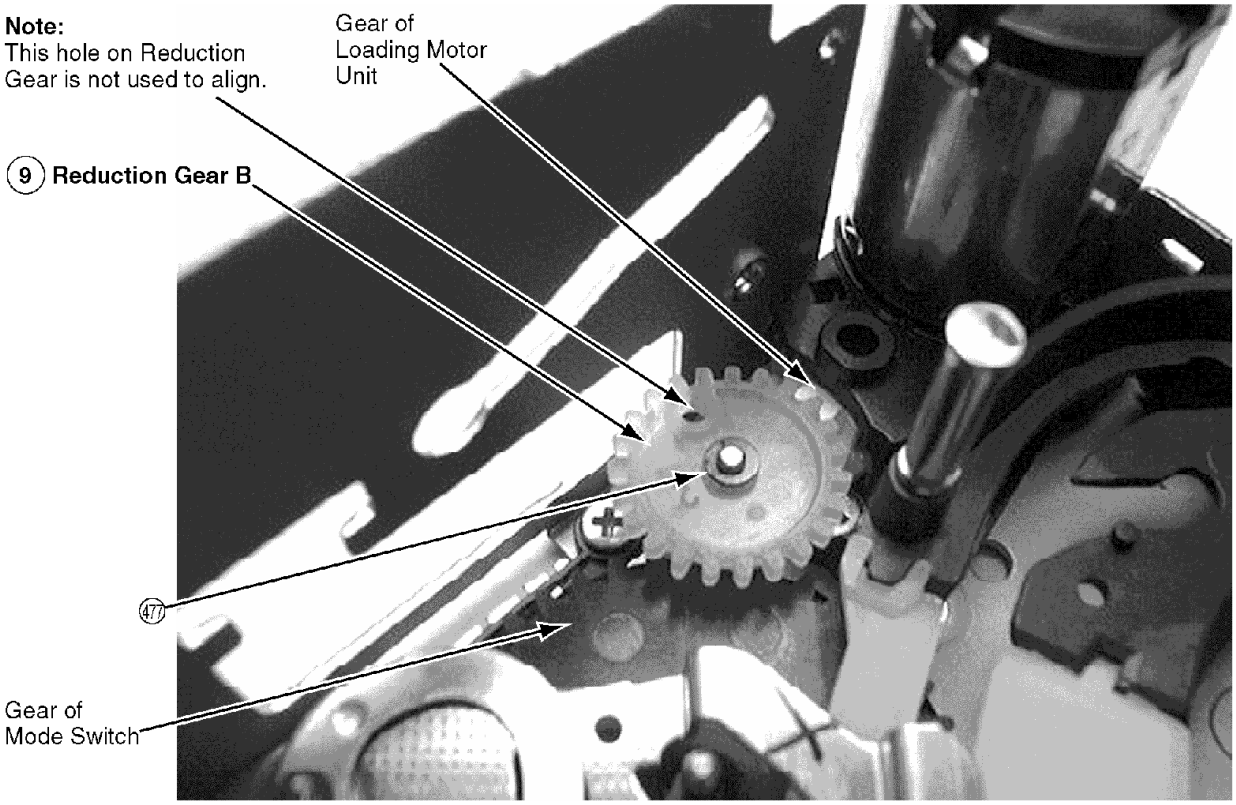
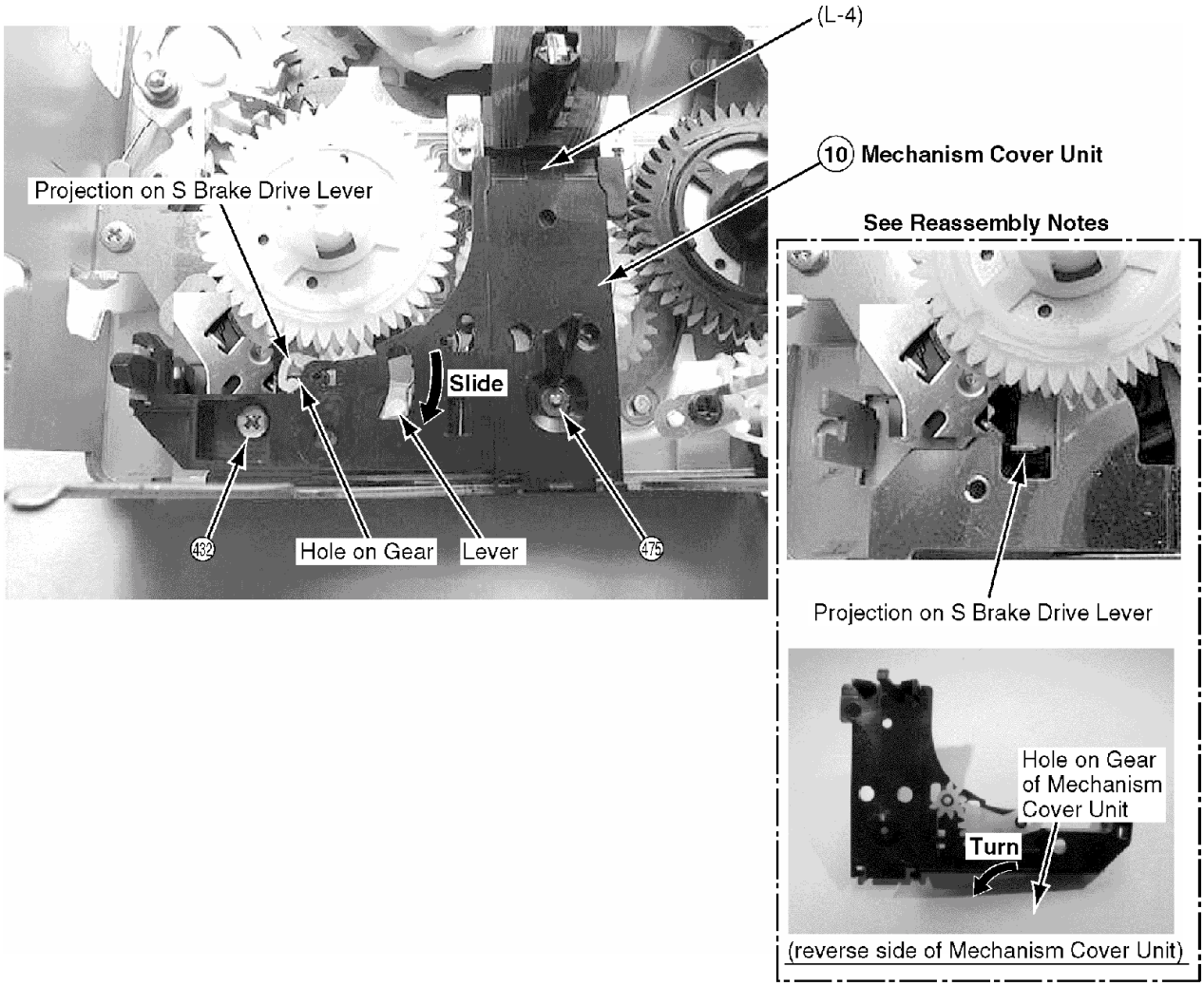


Fig. DM9

2.7.11. Mechanism Cover Unit

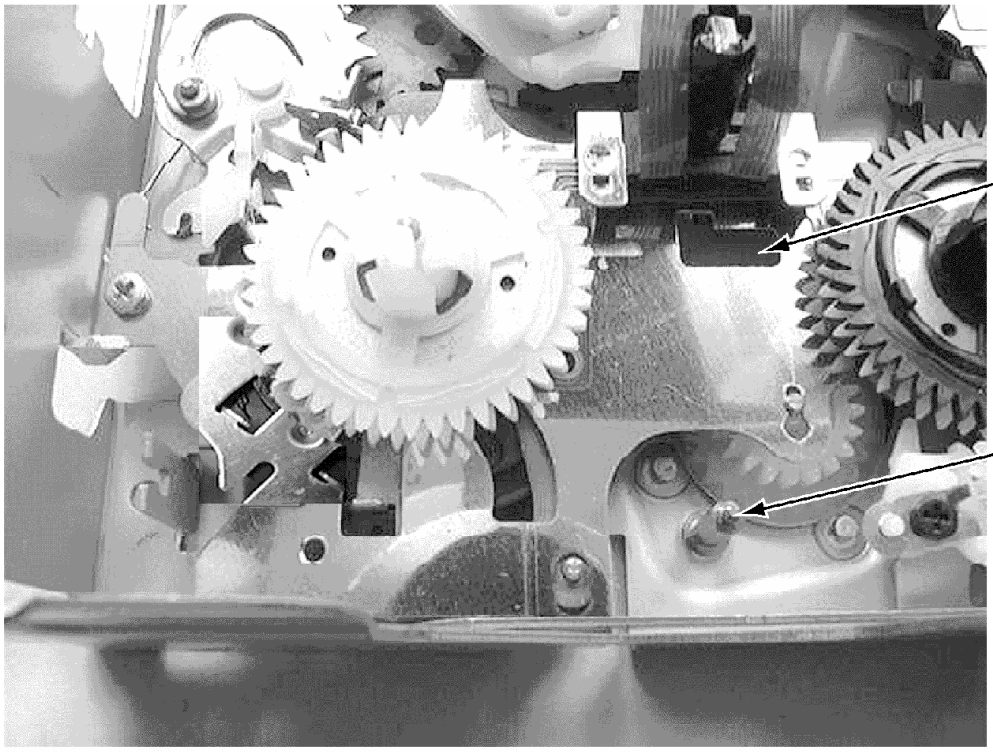


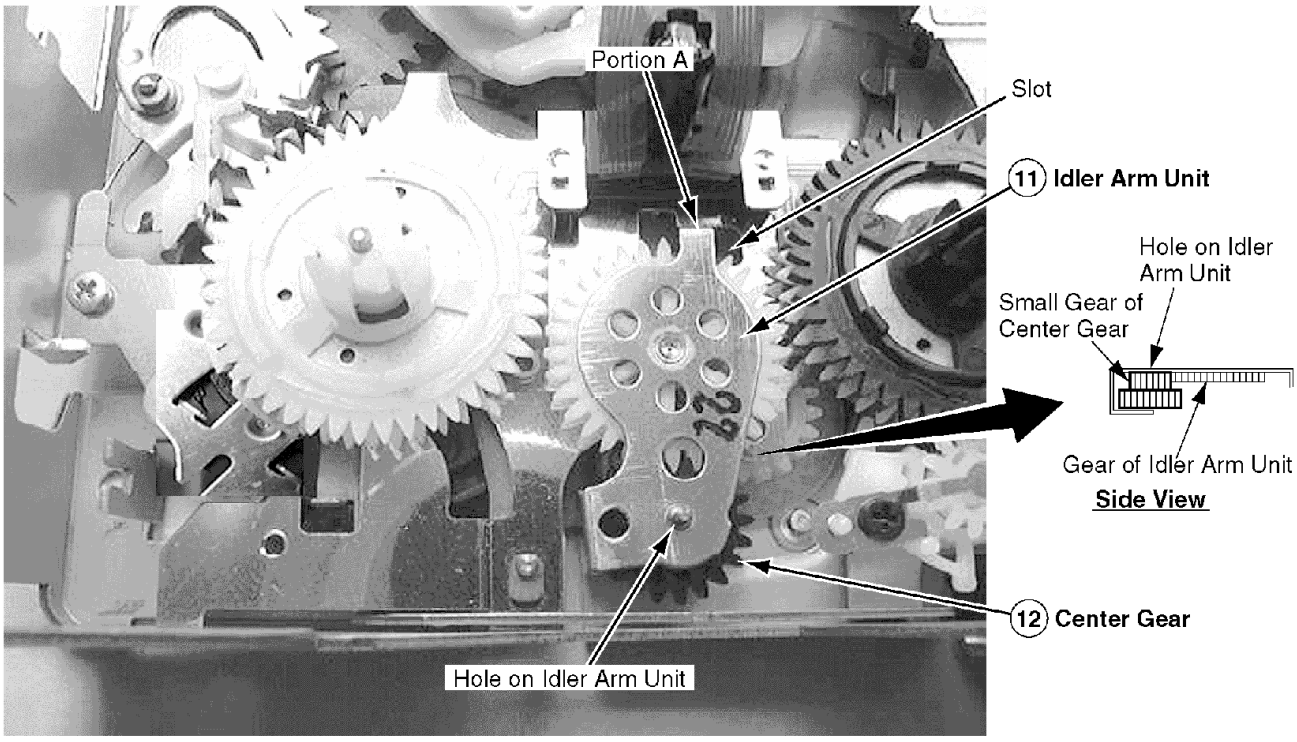
Disassembly Notes:
1. Before removing, slide the Lever as indicated by the arrow as shown.

Reassembly Notes:
1. Installation of Mechanism Cover Unit
1) Before installing, place the Mechanism in STOP Position by rotating the Mode Switch.
2) Turn the Gear on reverse side of Mechanism Cover Unit counterclockwise as shown.
3) Install the Mechanism Cover Unit so that the Projection on S Brake Drive Lever inserts to Hole on Gear of Mechanism Cover Unit.

Fig. DM10

2.7.12. Idler Arm Unit, Center Gear





Disassembly Notes:

1. When removing the Idler Arm Unit, remove both of Idler Arm Unit and Center Gear together.

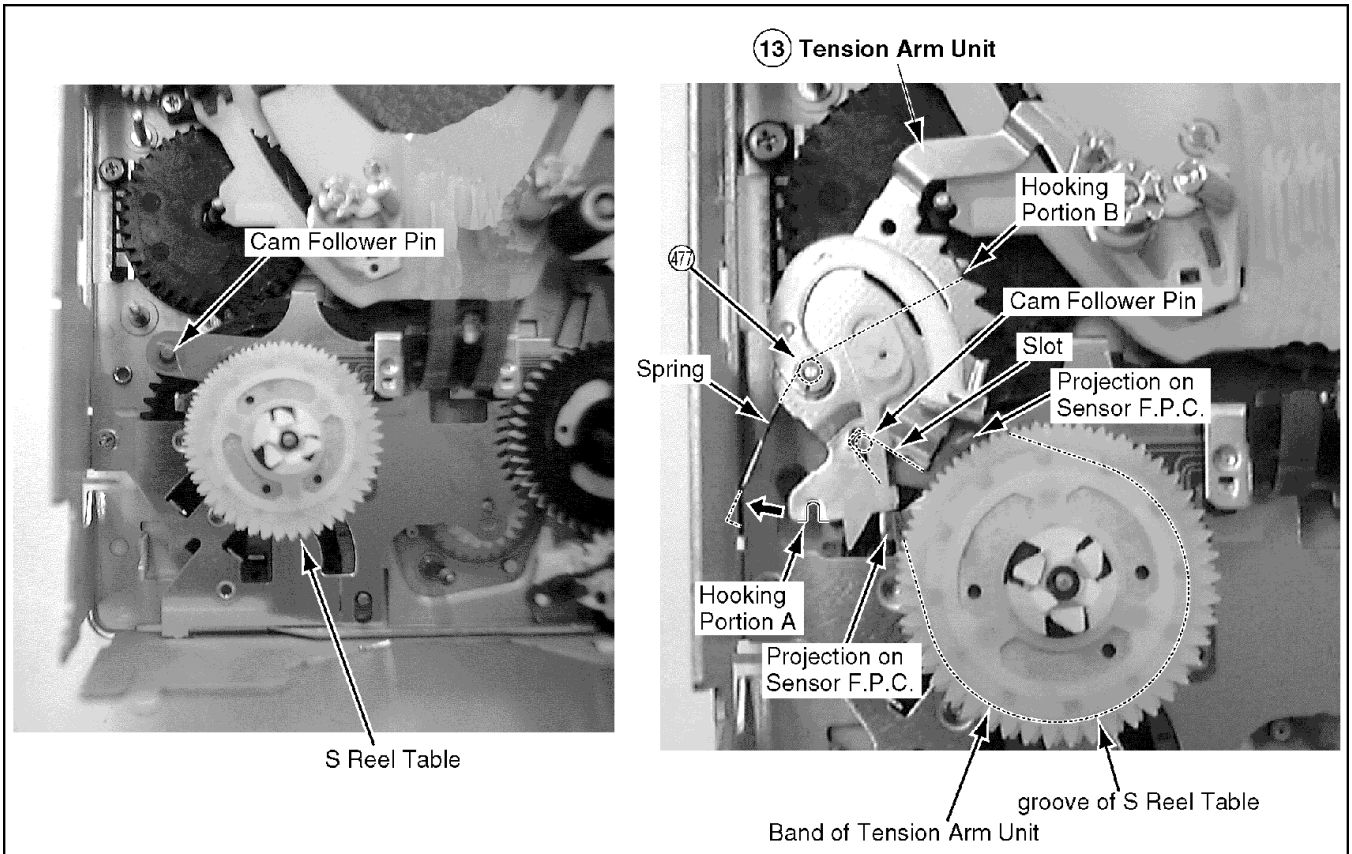
Reassembly Notes:

1. Installation of Idler Arm Unit and Center Gear

1) Set the Center Gear into Idler Arm Unit so that Hole on Idler Arm Unit are Through Holes. Confirm that the Small Gear of Center Gear engages with Gear of Idler Arm Unit.
2) Install Both of them together so that Pin on chassis is inserted to Hole on Idler Arm Unit, and Portion A is in Slot.

Fig. DM11

2.7.13. Tension Arm Unit



Disassembly Notes:

1. Work carefully so as not to damage the Band of Tension Arm Unit when removing.

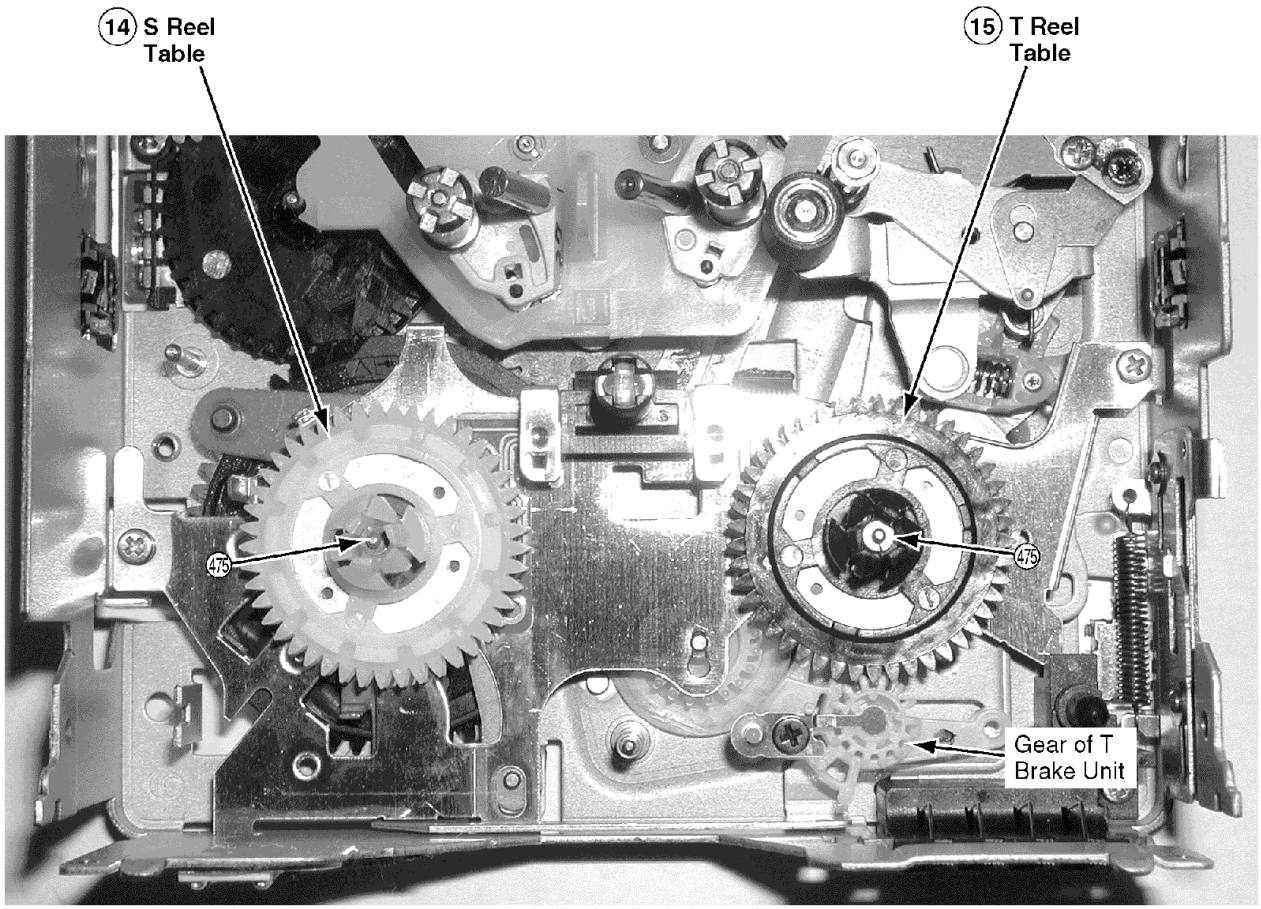
Reassembly Notes:

1. Installation of Tension Arm Unit

1) Before installing the Tension Arm Unit, place the Mechanism in STOP Position by rotating the Mode Switch, and then hook the Spring of Tension Arm Unit to Hooking Portion A and Hooking Portion B.
2) Install the Tension Arm Unit while hooking the Band of Tension Unit to groove of S Reel Table.
3) Confirm that Band of Tension Arm Unit and Projection on Sensor F.P.C. are in the correct position, and that Cam follower Pin is set into Slot of Tension Arm Unit.
4) After installing the Tension Arm Unit, unhook the Spring from Portion A, and then confirm that the Spring is in the lower position than Sensor F.P.C.

Fig. DM12

2.7.14. S Reel Table, T Reel Table



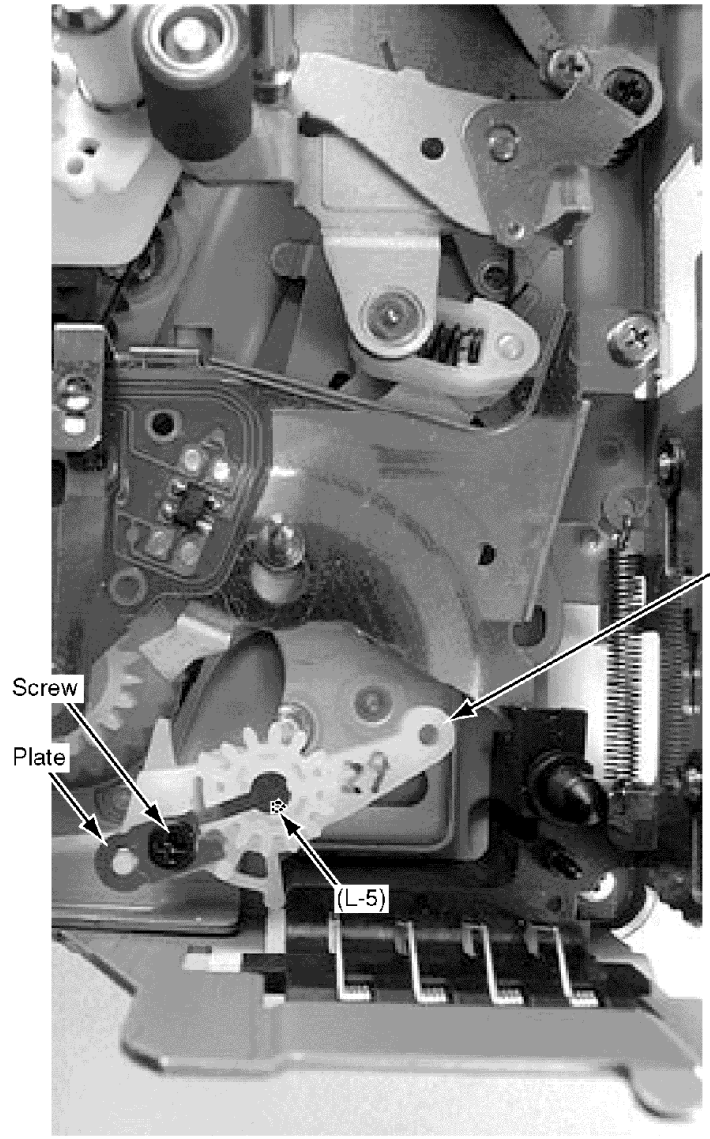
Reassembly Notes:

1. Installation of S Reel Table and T Reel Table

1) Confirm that the Gear of T Reel Table engages with the Gear of T Brake Unit.

Fig. DM13

2.7.15. T Break Unit

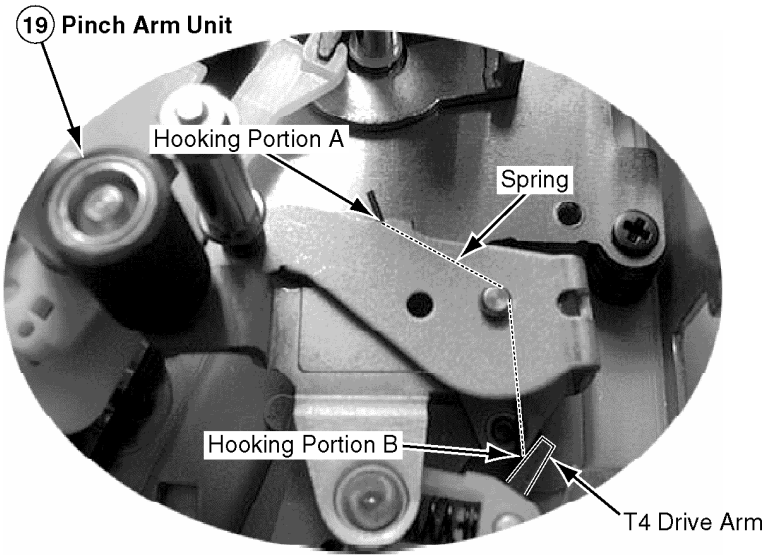


Disassembly Notes:
1. When removing the T Brake Unit, remove a Screw and the Plate. Then, remove the T Brake Unit while releasing the Locking Tab (L-5).
2. Use extreme care when removing the T Brake Unit.
   If Locking Tab (L-5) is broken, install a new T Brake Unit.

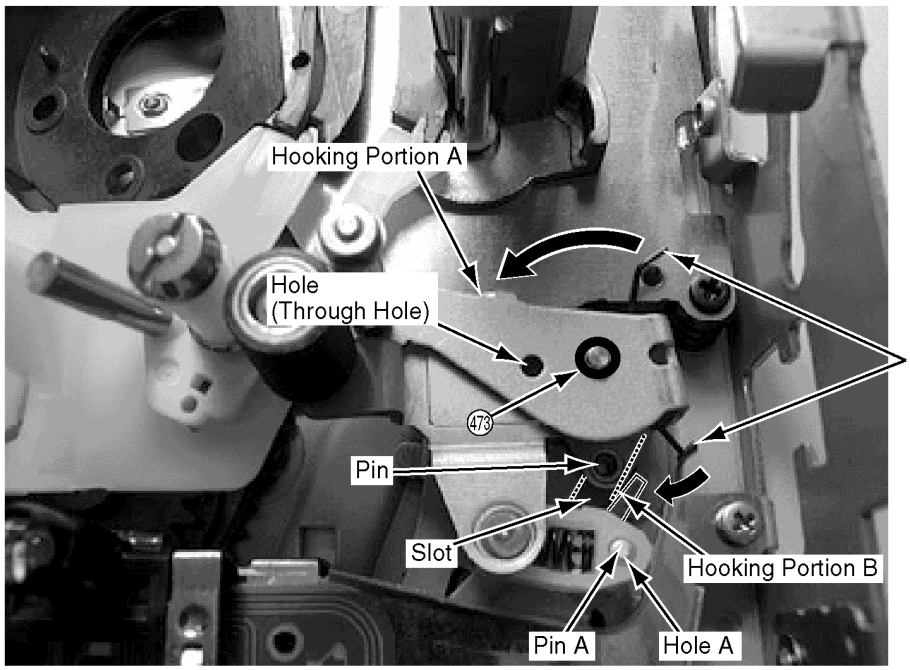
Reassembly Notes:
1. When installing the T Brake Unit, DO NOT apply pressure to T Brake Unit Plate.

Fig. DM15

2.7.16. Pinch Arm Unit



See Reassemly Notes.



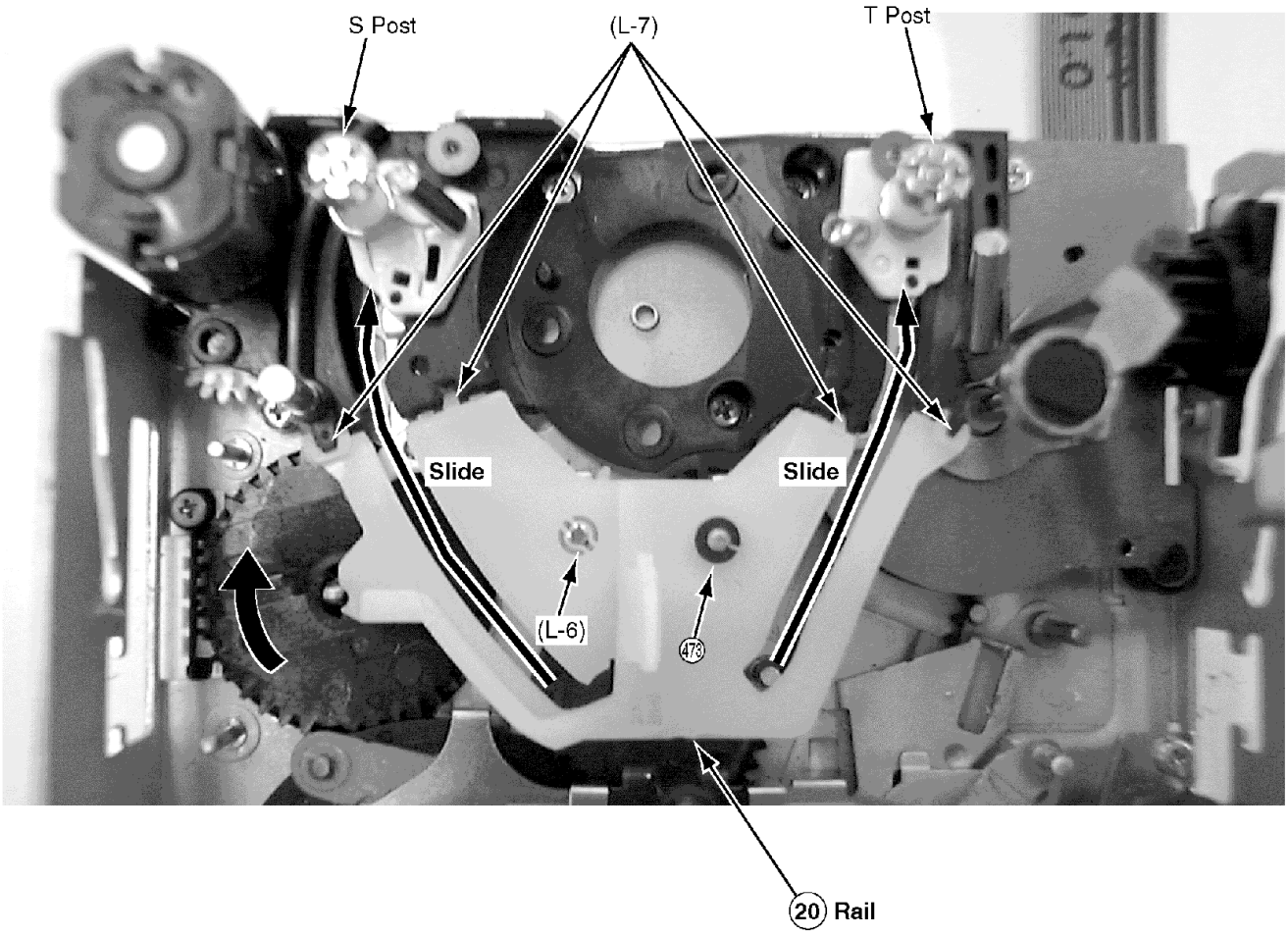
Reassembly Notes:

1. Installation of Pinch Arm Unit

1) Before installing, place the Mechanism in STOP Position by rotating the Mode Switch counterclockwise fully.
2) Install the Pinch Arm Unit so that Pin of Pinch Arm Unit is in Slot and that Pin A is inserted to Hole A on Pinch Arm Unit. (The holes on Pinch Arm Unit are Through Hole.)
3) Hook the Spring to Hooking Portion A, and then to Hooking Portion B of T4 Drive Arm.

Fig. DM16

2.7.17. Rail

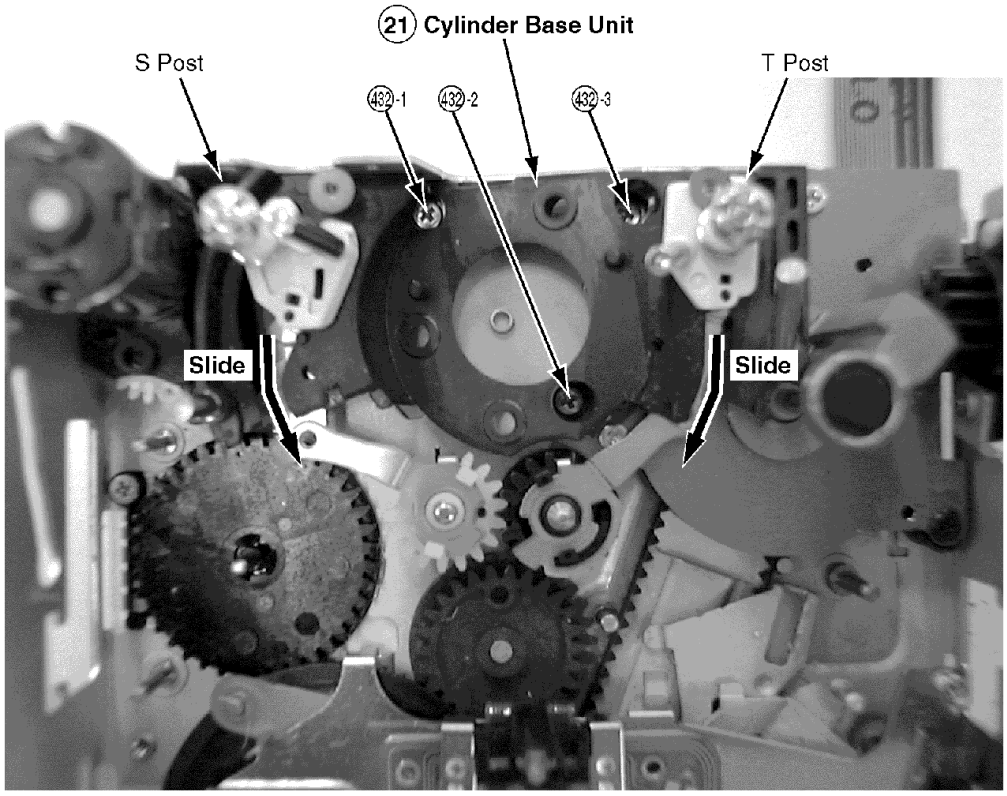


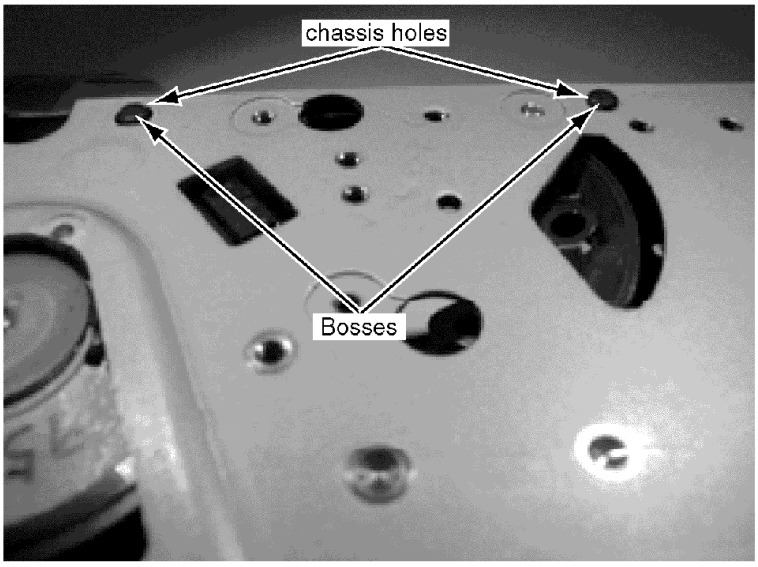
Disassembly Notes:
1. Before removing the Rail, slide the S & T Posts by rotating the Mode Switch clockwise.
2. When removing the Rail, release the Locking Tab (L-6) first so as not to damage the 4 Locking Tabs (L-7).

Reassembly Notes:
1. Installation of Rail
1) Set 4 Locking Tabs (L-7), and then push down the Rail to set Locking Tab (L-6) firmly.

Fig. DM17

2.7.18. Cylinder Base Unit



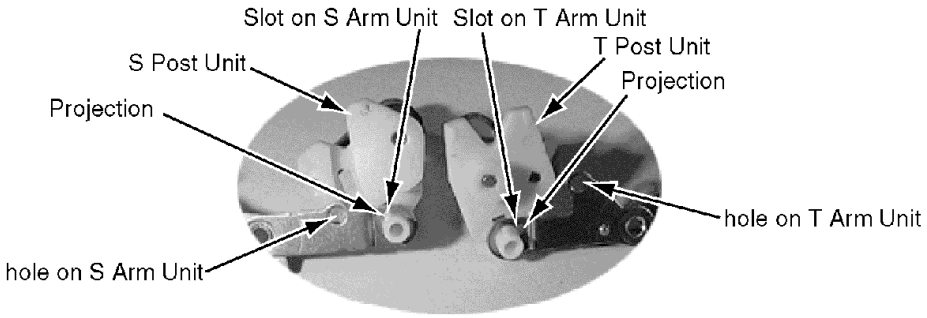


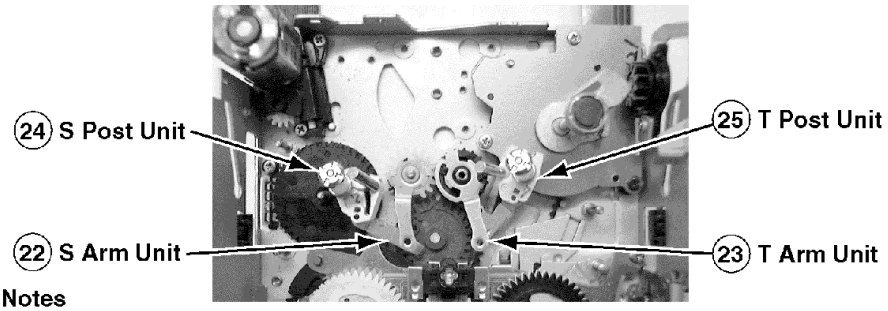
Disassembly Notes:
1. Slide the S & T Posts as indicated by the arrow.

Reassembly Notes:
1. Before installing the Cylinder Base Unit, confirm that the S & T Posts are lowered.
2. When installing, tighten 3 Screws 432-1, 432-2 and 432-3 in order.
3. After installing, slide the S & T Posts to insert the groove of Cylinder Base Unit.

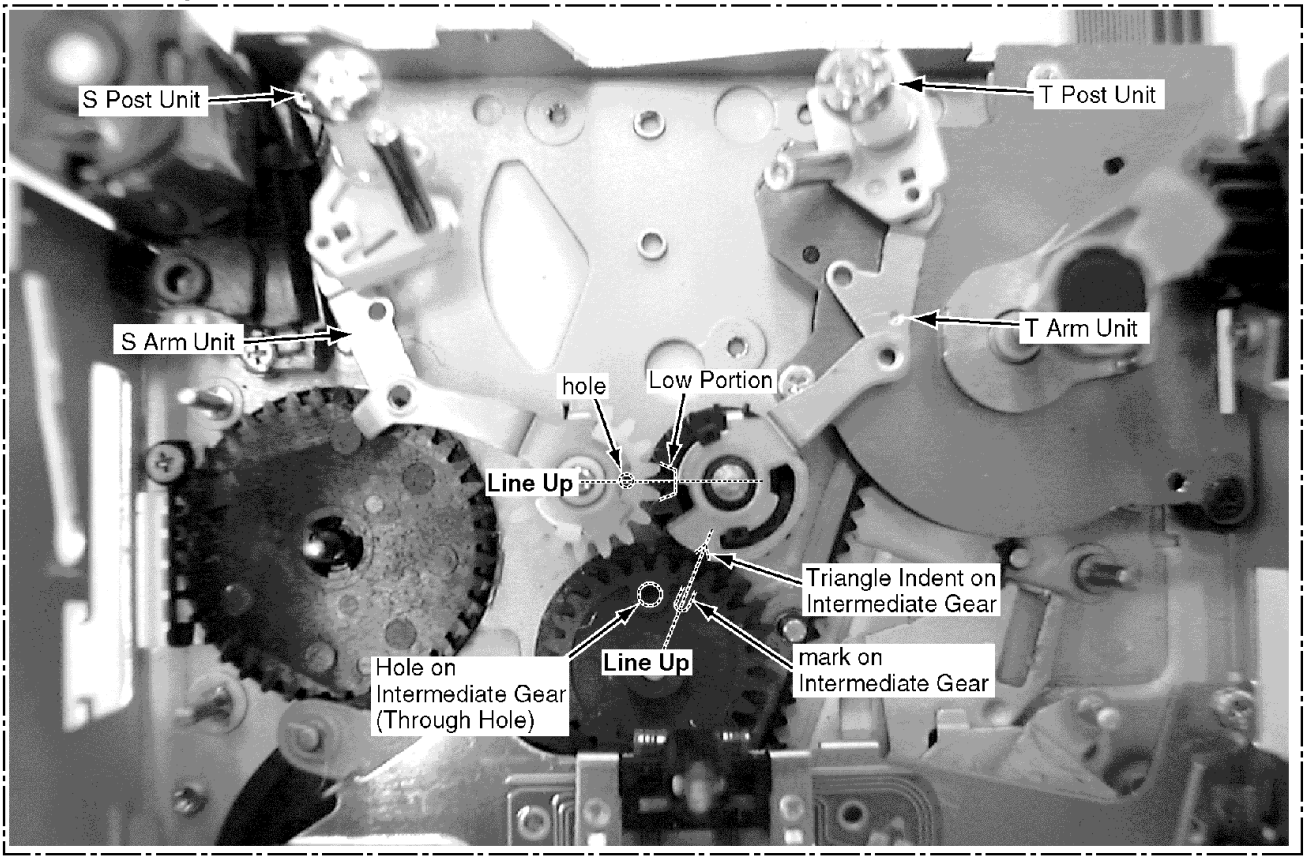
Fig. DM18

2.7.19. S & T Arm Unit, S & T Post Unit





See Reassembly Notes



Disassembly Notes:

1. When removing the S & T Post Unit, pass the Projections from each slots on S & T Arm Unit.

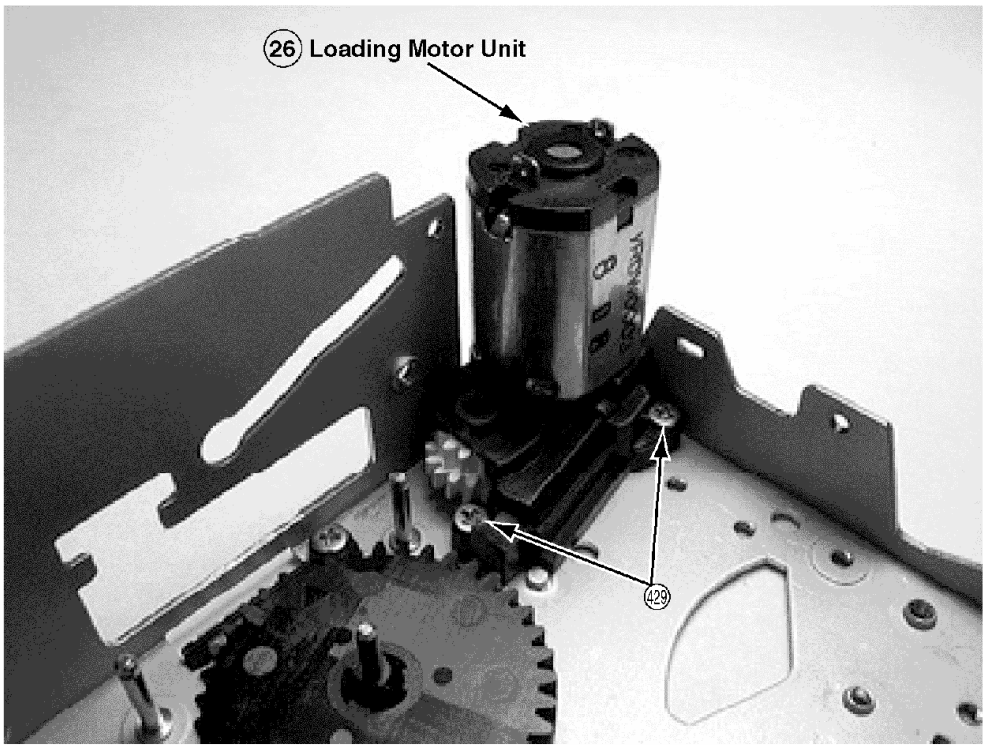
Reassembly Note:

1. Alignment/Installation of S & T Post Unit, S & T Arm Unit

1) Install the S Arm Unit to the S Post Unit while passing the Projection.
2) Install the T Arm Unit to the T Post Unit while passing the Projection.
3) Confirm that the hole on Intermediate Gear is aligned with the hole on chassis (Through Hole).
4) Install both the T Post Unit and the T Arm Unit so that the Triangle Indent on T Arm Unit is aligned with the mark on Intermediate Gear.
5) Install both the S Post Unit and the S Arm Unit so that the hole on the S Arm Unit is aligned with Low Portion of T Arm Unit.

Fig. DM19

2.7.20. Loading Motor Unit



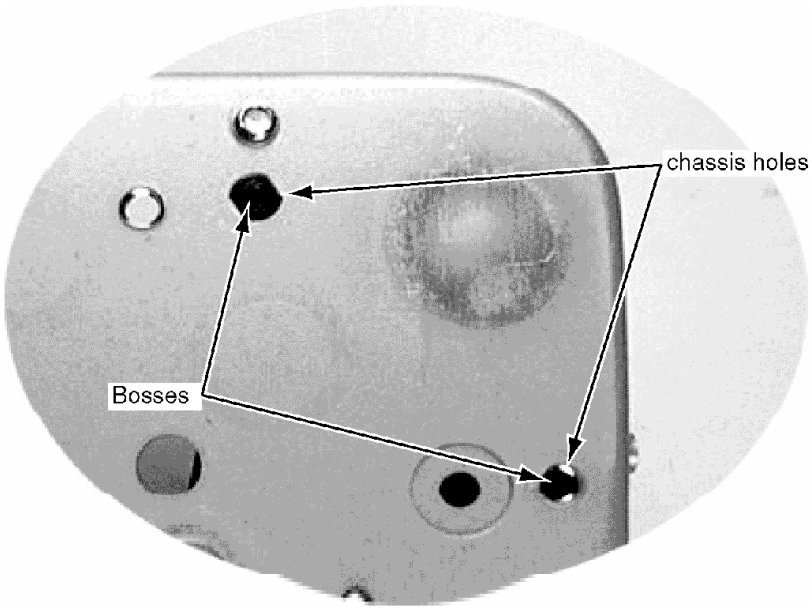
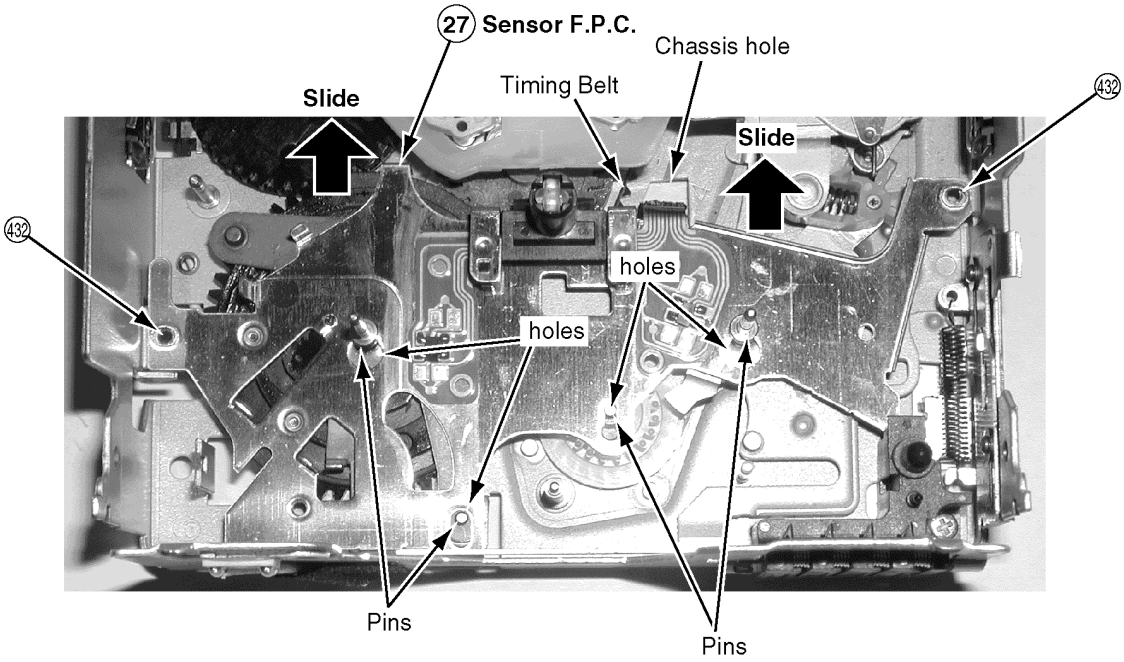


Fig. DM20

2.7.21. Sensor F.P.C.

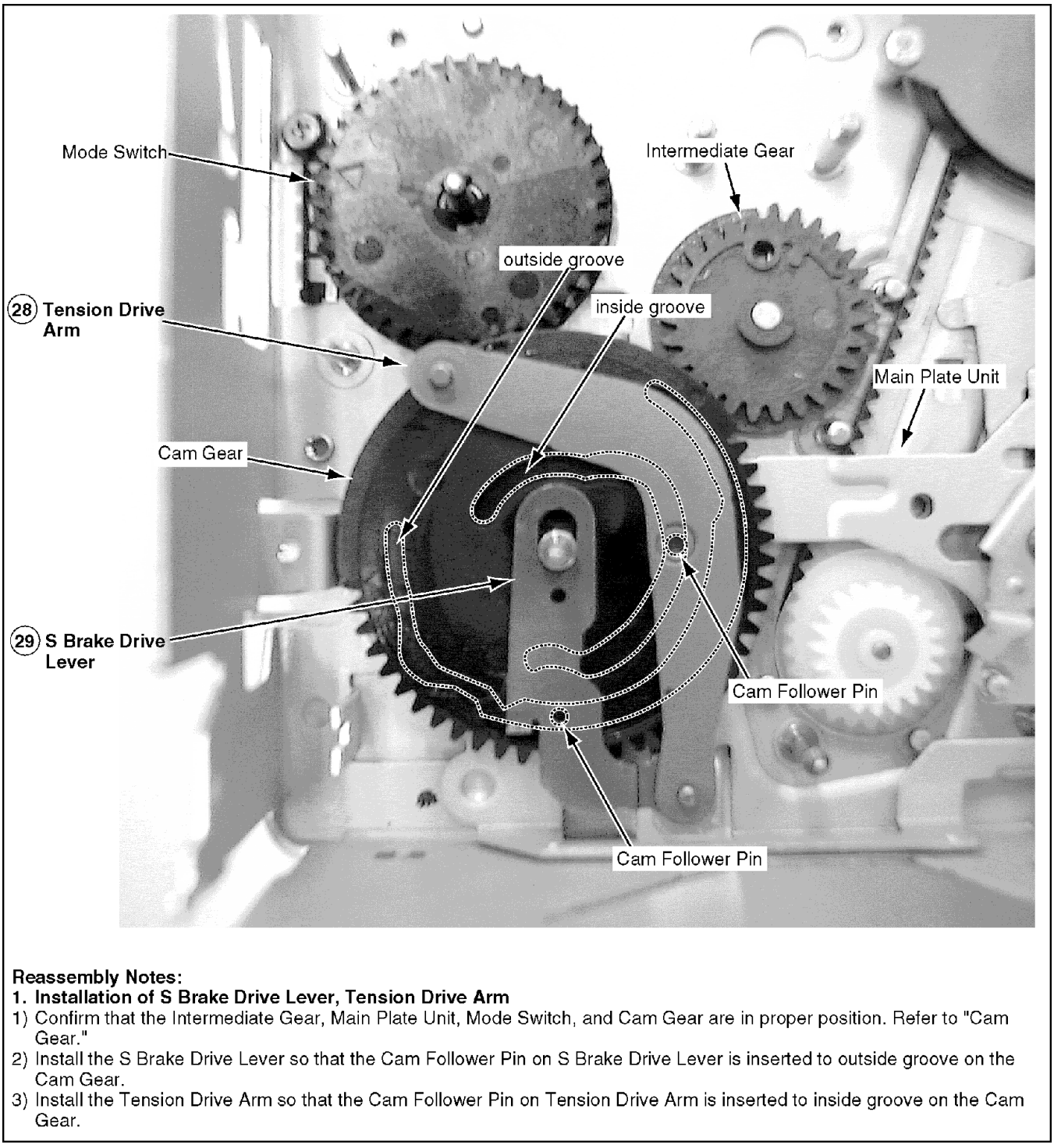


Disassembly Notes:
1. When removing the Sensor F.P.C., slide it as indicated by the arrow.
2. Work carefully so as not to damage the F.P.C. when removing it.

Reassembly Notes:
1. Installation of Sensor F.P.C.
1) Install the Sensor F.P.C. so that the Pins on chassis are in the holes on the Sensor F.P.C.
2) Slide the Sensor F.P.C., and then tighten 2 Screws (432).
3) Put the F.P.C. through the Chassis hole, and confirm that there is no contact between the Timing Belt and the F.P.C.

Fig. DM21

2.7.22. Tension Drive Arm, S Brake Drive Lever



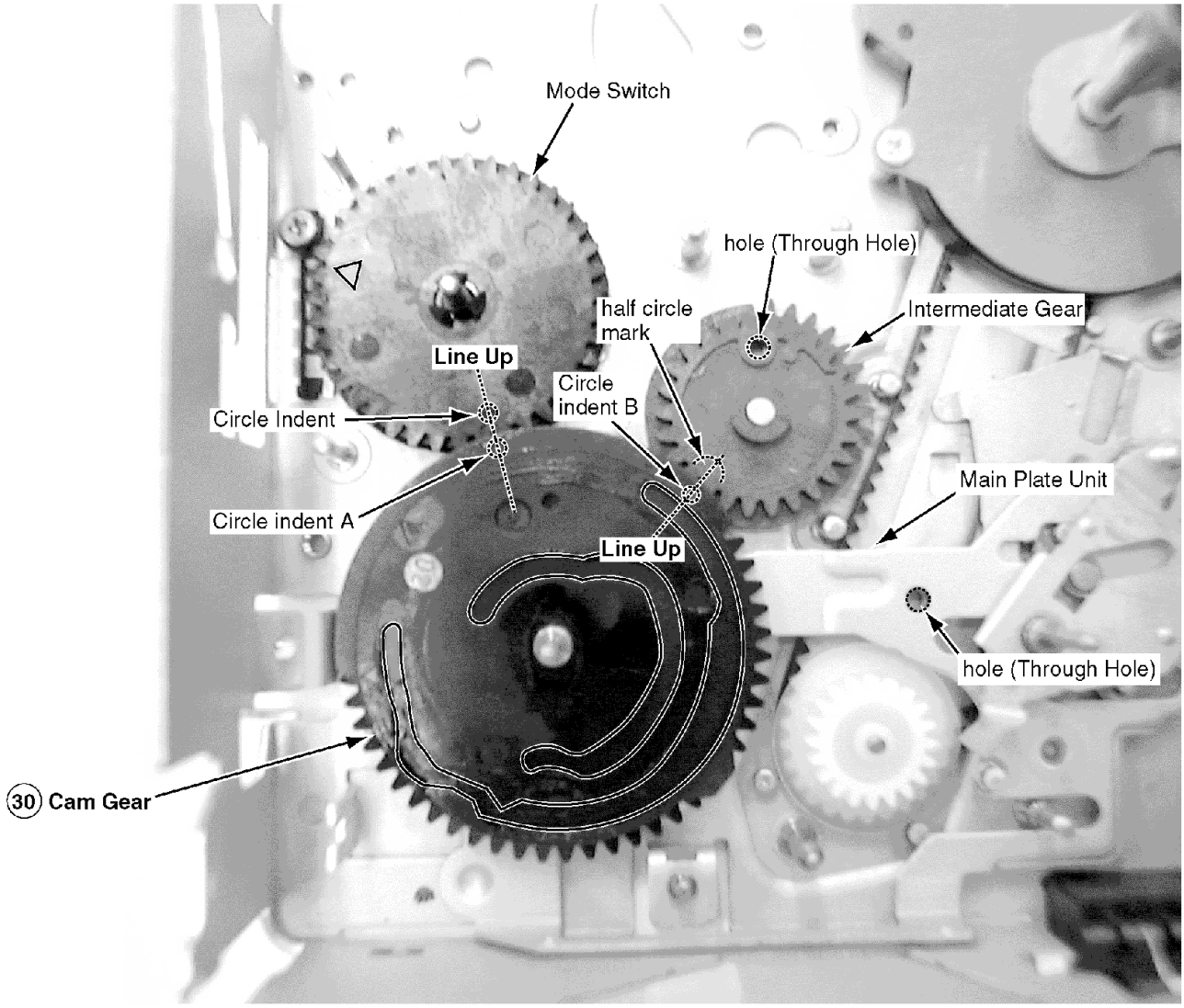
Reassembly Notes:

1. Installation of S Brake Drive Lever, Tension Drive Arm

1) Confirm that the Intermediate Gear, Main Plate Unit, Mode Switch, and Cam Gear are in proper position. Refer to "Cam Gear."
2) Install the S Brake Drive Lever so that the Cam Follower Pin on S Brake Drive Lever is inserted to outside groove on the Cam Gear.
3) Install the Tension Drive Arm so that the Cam Follower Pin on Tension Drive Arm is inserted to inside groove on the Cam Gear.

Fig. DM22

2.7.23. Cam Gear



Reassembly Notes:

1. Alignment of Intermediate Gear, Main Plate Unit, Mode Switch, Cam Gear

1) Before installing the Cam Gear, align the hole on Intermediate Gear with hole on chassis (Through Hole), and then, align the hole on the Main Plate Unit with hole on chassis (Through Hole).
2) Install the Cam Gear so that Circle indent A on Cam Gear is aligned with Circle Indent on Mode Switch, and the Circle indent B on Cam Gear is aligned with half circle mark on Intermediate Gear.

Fig. DM23

2.7.24. Pinch Drive Arm, Intermediate Gear

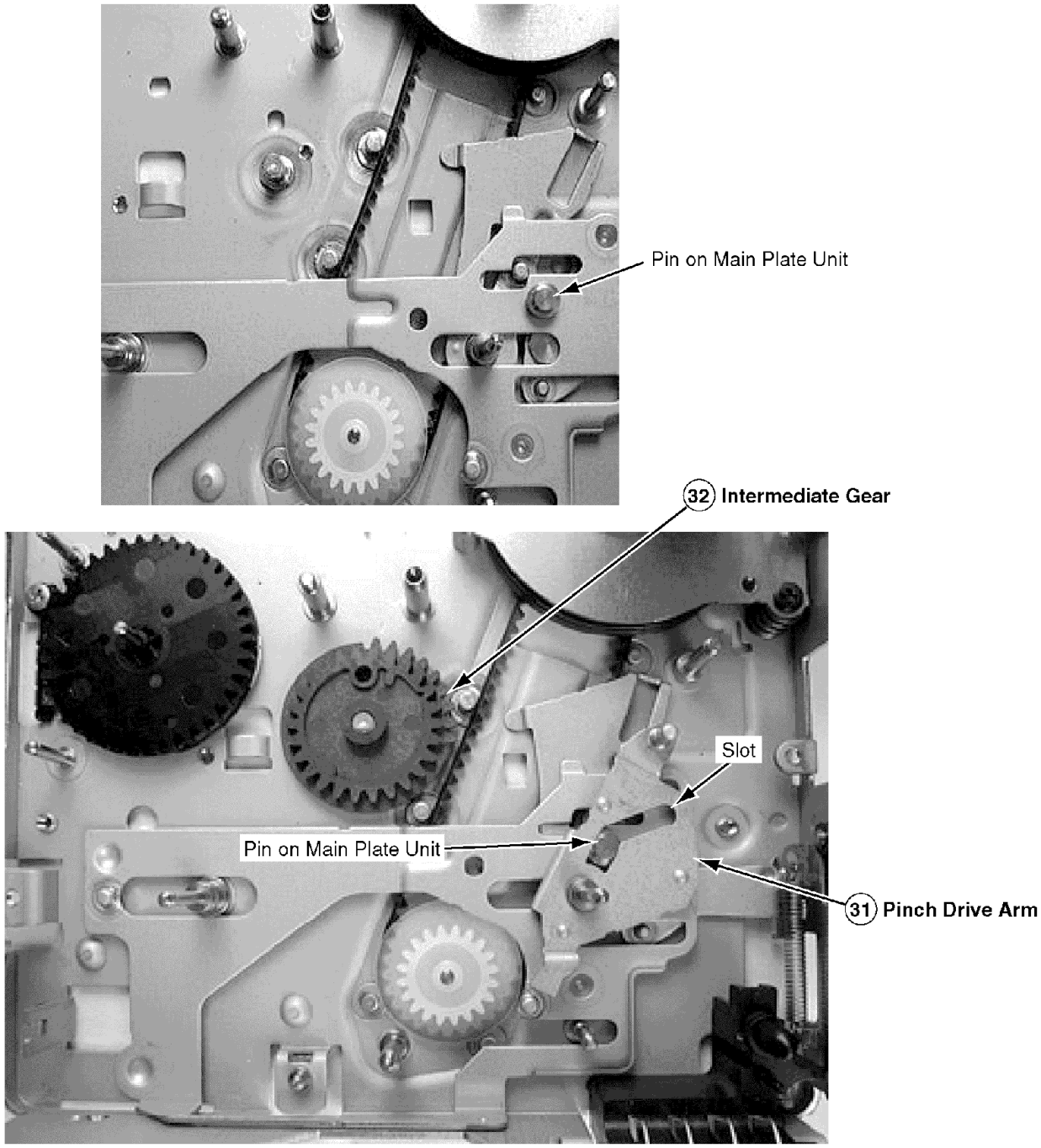
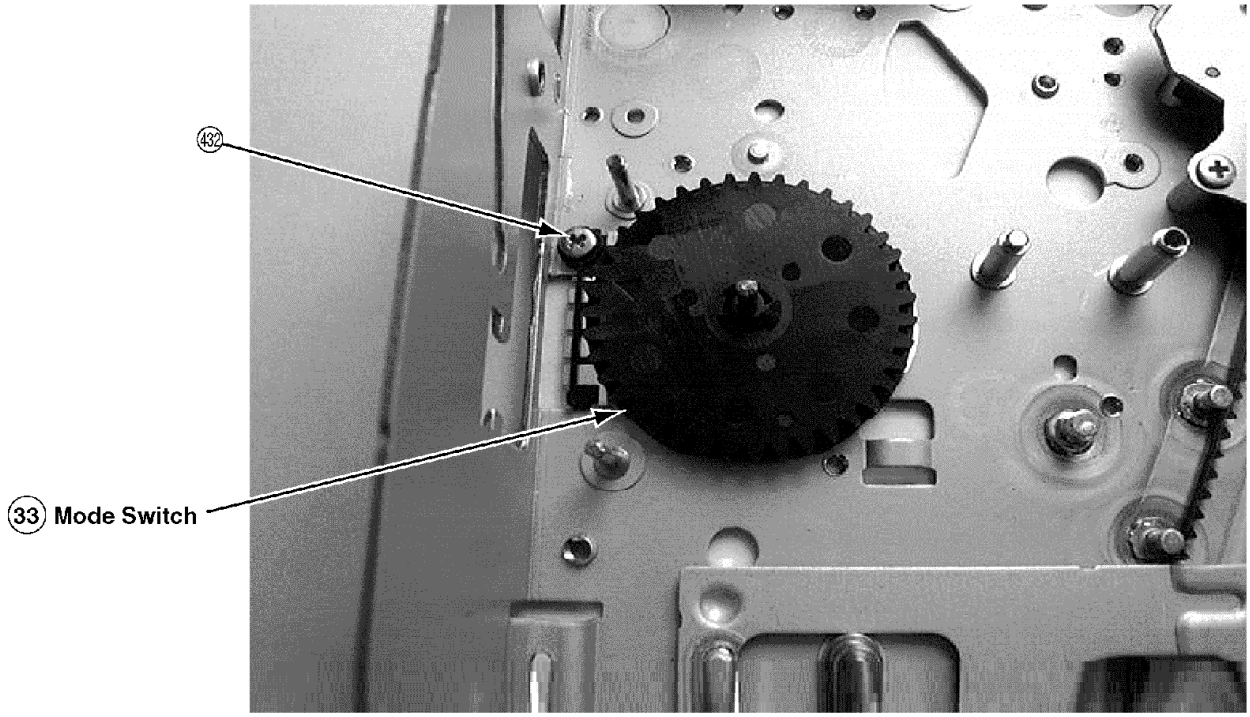
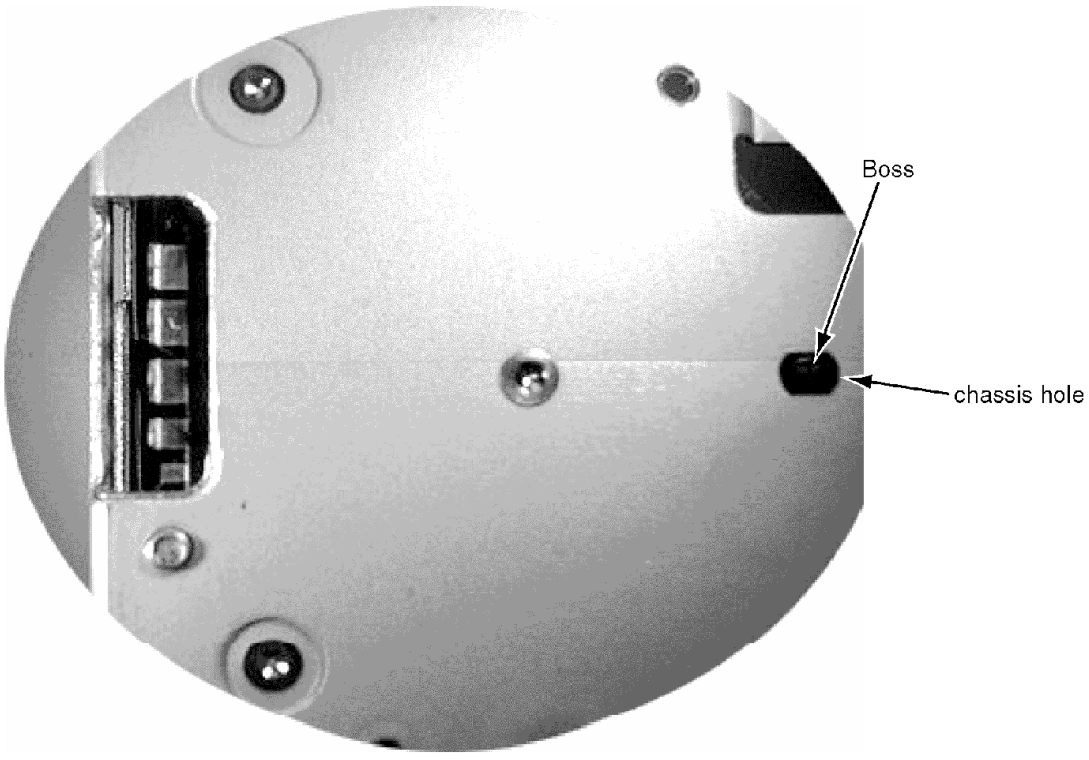


Fig. DM24

2.7.25. Mode Switch





Reassembly Notes:
1. When installing the Mode Switch, install the Mode Switch without tottering

Fig. DM25

2.7.26. MIC Switch

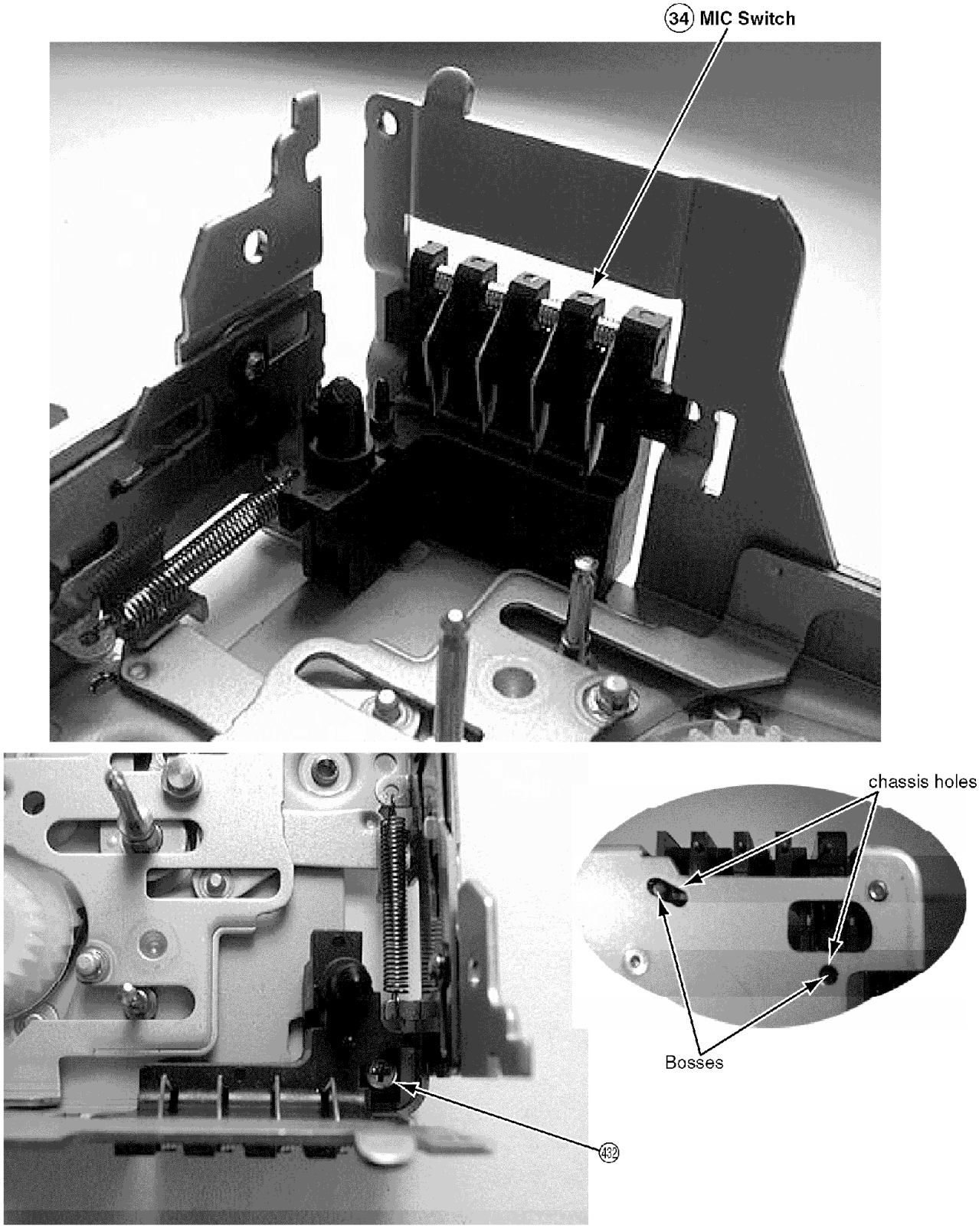
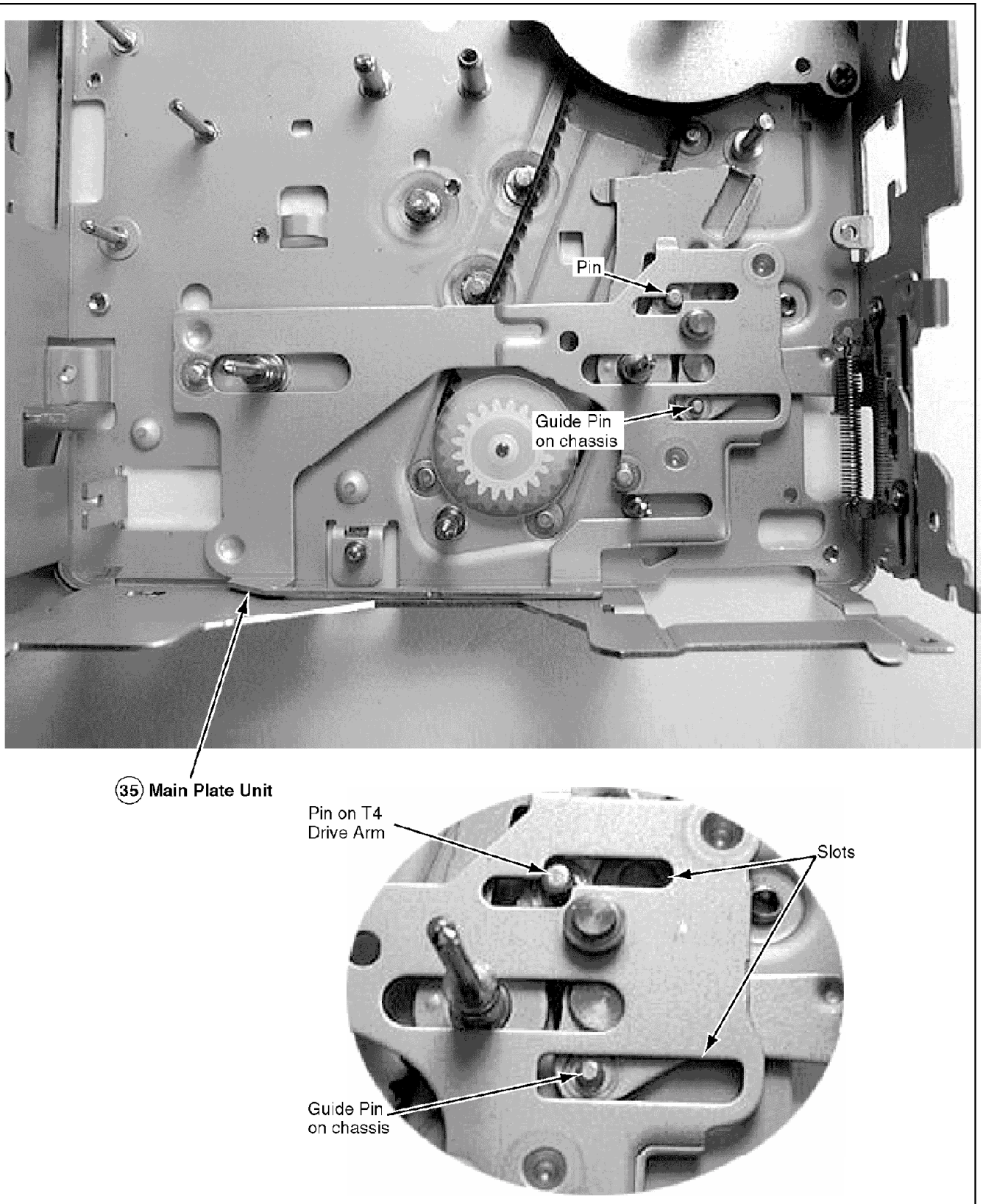


Fig. DM26

2.7.27. Main Plate Unit



Reassembly Notes:

1. Installation of Main Plate Unit

1) Install the Main Plate Unit so that Pin on T4 Drive Arm and Guide Pin on chassis are in Slots on Main Plate Unit correctly.

Fig. DM27

2.7.28. T4 Drive Arm

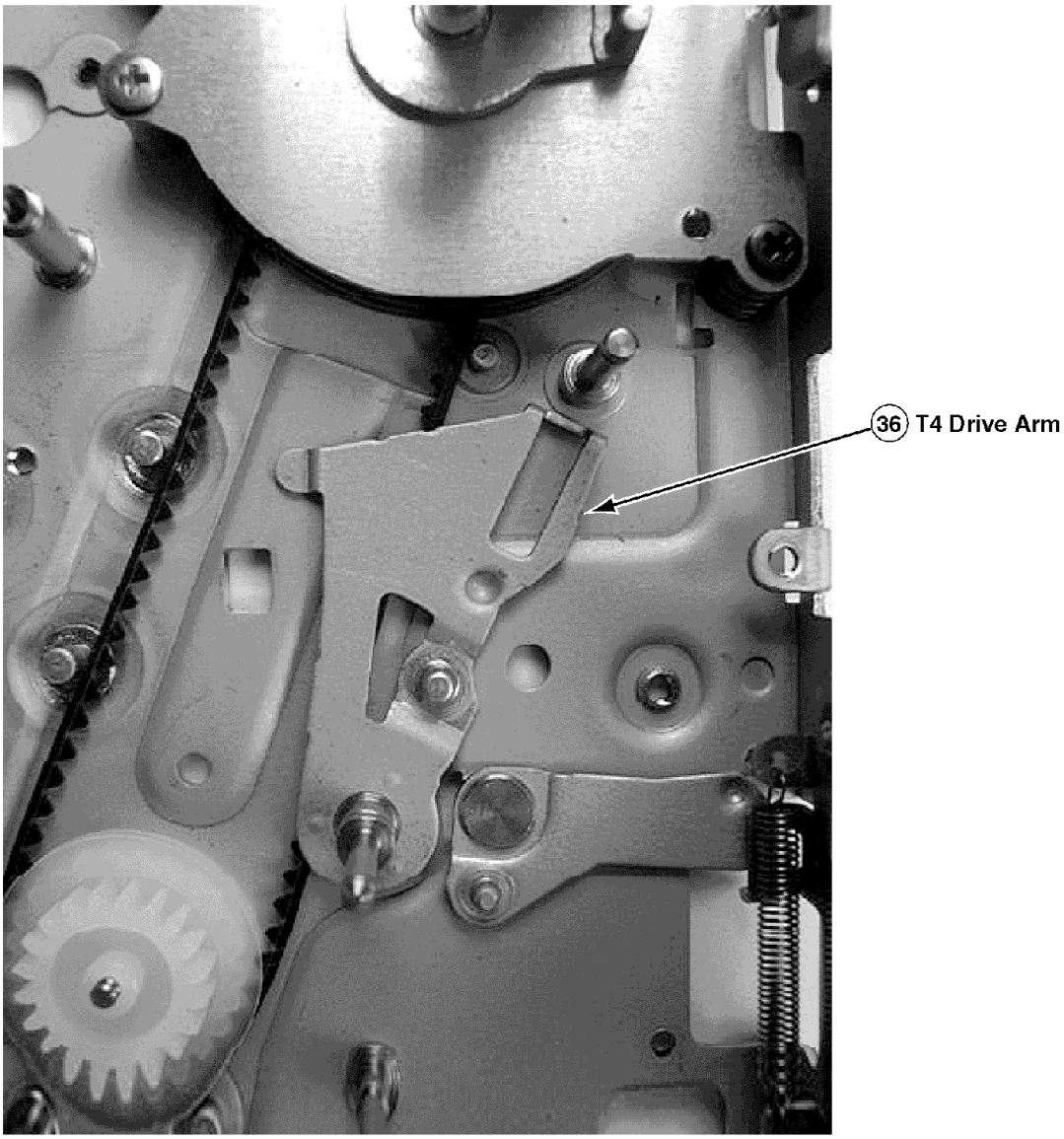
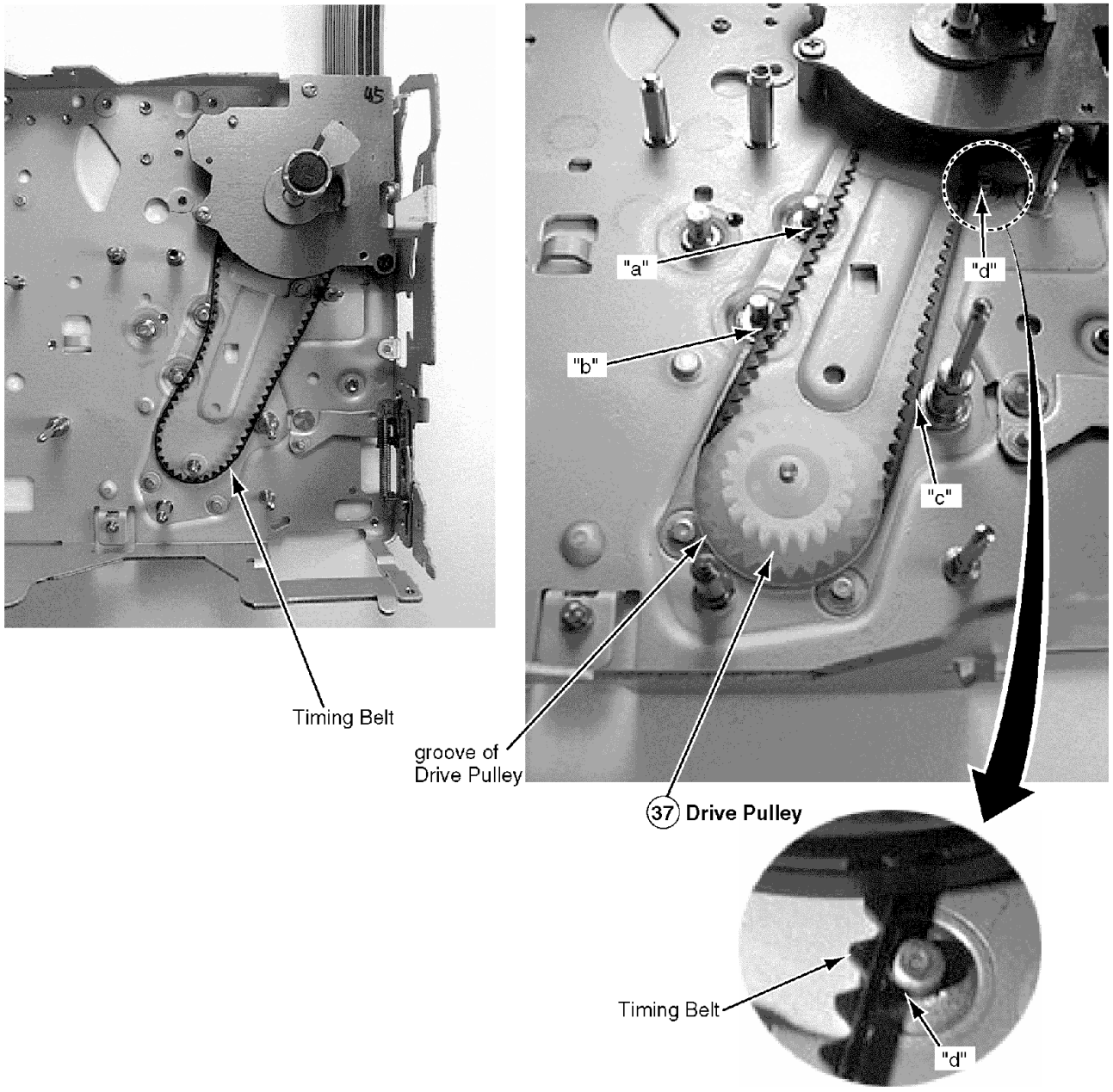


Fig. DM28

2.7.29. Drive Pulley

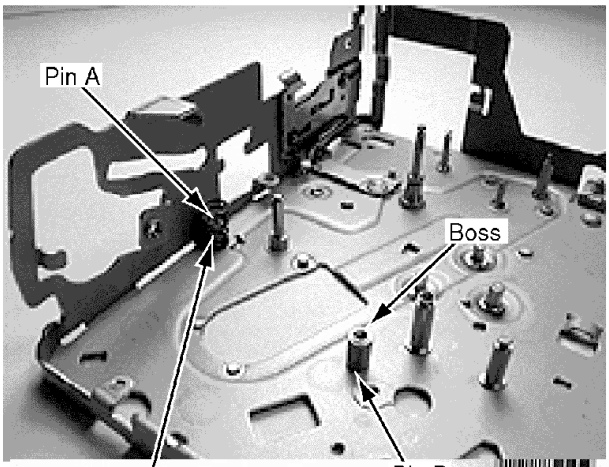


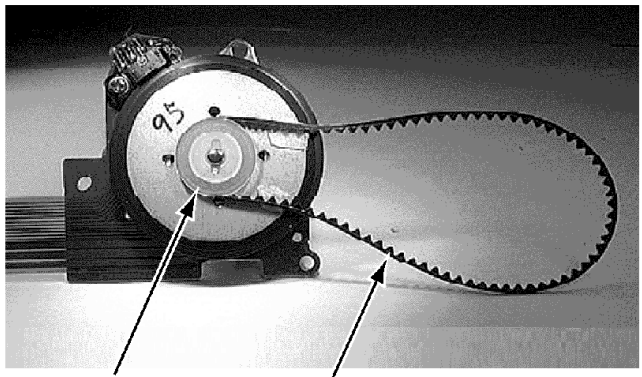
Reassembly Notes:

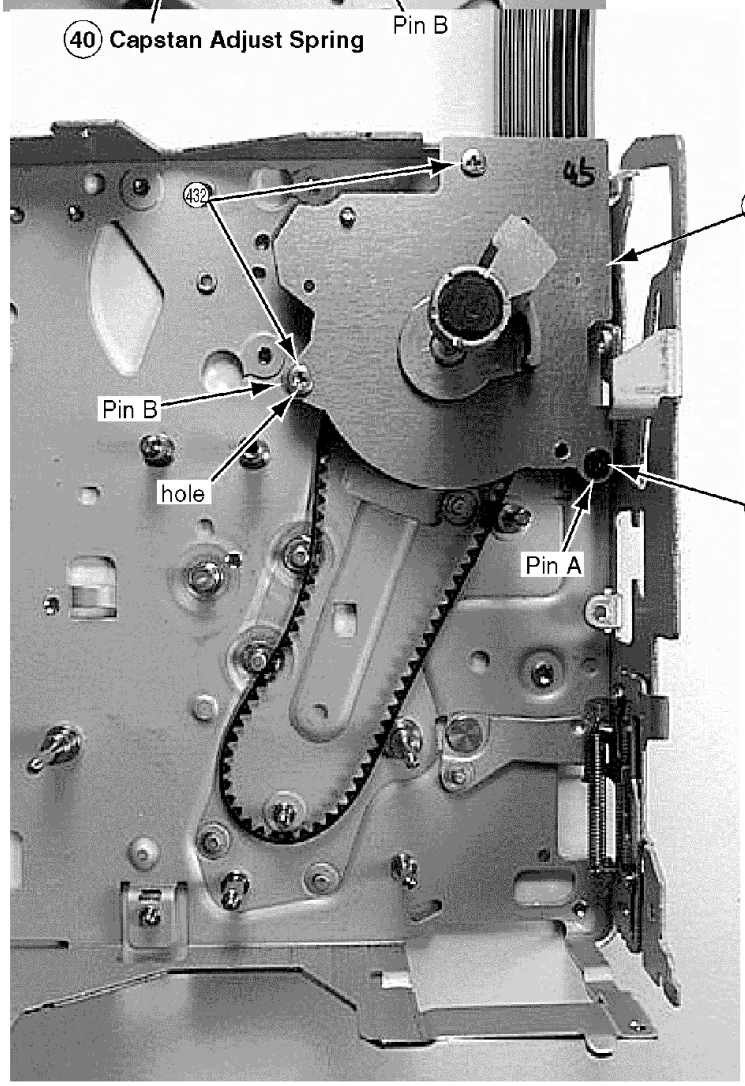
1. DO NOT let the Timing Belt twist.
   Be careful so as not to let the Timing Belt touch the greased portion.
2. When installing the Drive Pulley, confirm that the Timing Belt is in correct position as shown.
3. After installing the Drive Pulley, confirm that Drive Pulley and Capstan Rotor can rotate smoothly.

Fig. DM29

2.7.30. Capstan Unit, Timing Belt, Capstan Adjust Spring



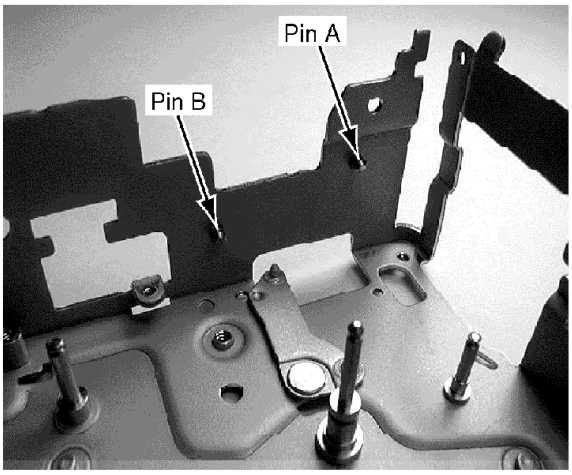


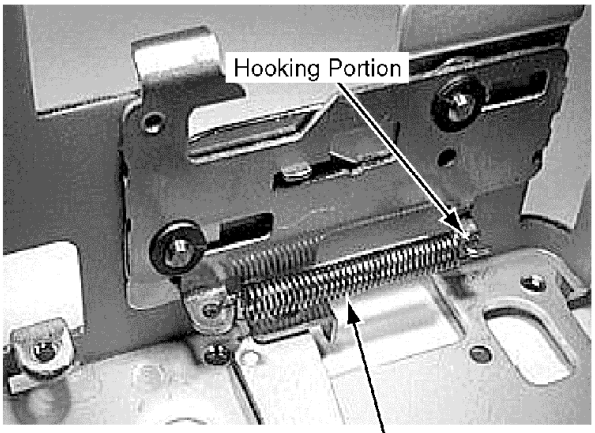


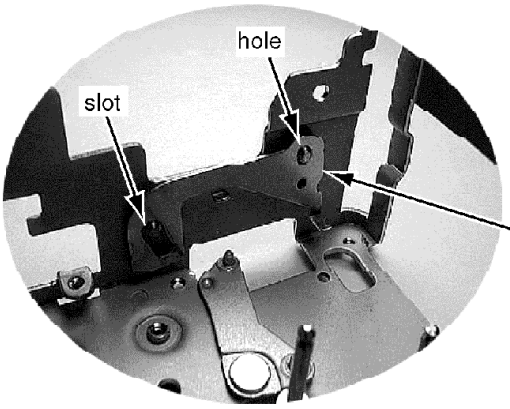
Reassembly Notes:
1. When installing the Capstan Unit, hook the Timing Belt to the groove of Capstan Unit.

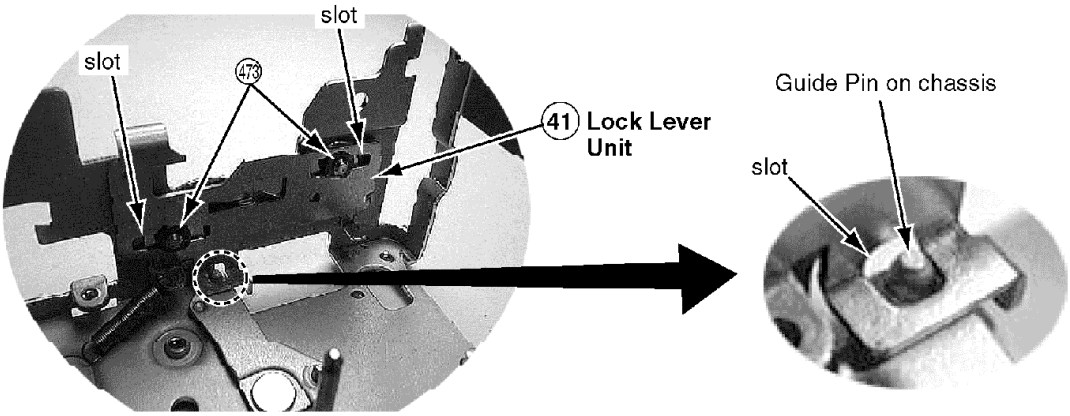
Fig. DM30

2.7.31. Lock Lever Unit, Lock Pick Lever









Reassembly Notes:

1. Installation of Lock Lever Unit

1) Install the Lock Lever Unit so that Pin A and Pin B are inserted to slots on Lock Lever Unit and Guide Pin on chassis is inserted to slot on Lock Lever Unit.

Fig. DM31

SECTION 3

ADJUSTMENT PROCEDURES

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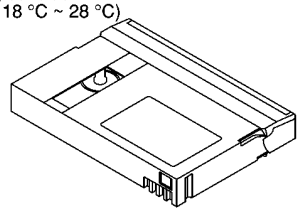
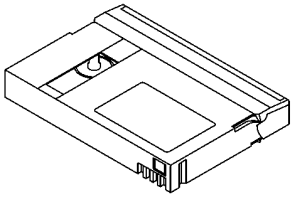
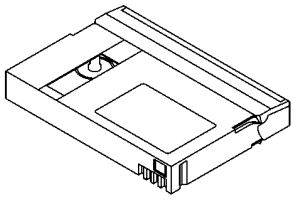
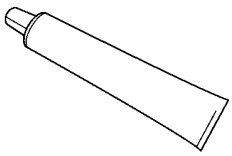
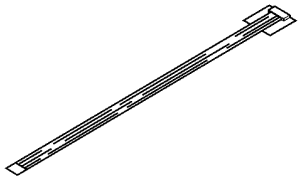
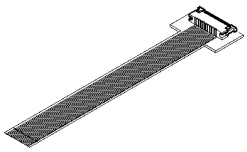
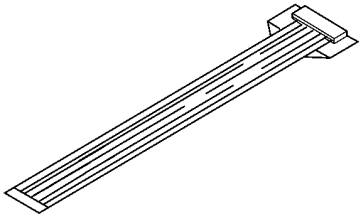
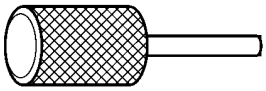
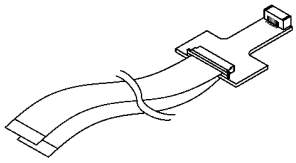
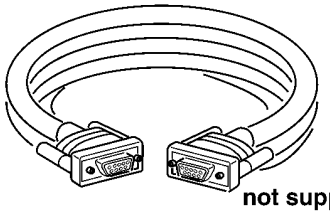
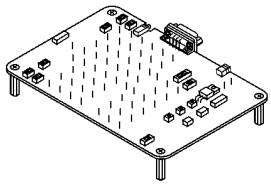
3 ADJUSTMENT PROCEDURES

3.1. SERVICE FIXTURES & TOOLS

Color Bar Standard Tape VFM3110EDS (Keeping condition: Keep at 18 °C ~ 28 °C) 	**Tape Path Alignment Tape** LSVQ0041 	**DVC Head Cleaning Tape** VFK1451 
EVR Software **VFK1820A**	**Grease** LSUQ0002 	**Extension Cable 10P** LSUA0016 
Extension Cable 18P LSUA0017 	**Extension Cable 28P** VUVS0015 	**Grease** VFKS0081
Post Height Adjustment Fixture LSVQ0021 	**Camera Connecting Cable** LSUP0016 	**RS232C Cable (Cross Cable)**  **not supplied**
Interface Board for Electrical Adjustment LSUP0007 		

3.2. MECHANICAL ADJUSTMENT

3.2.1. Comparison between adjustment items and replacement parts

Adjustment Items \ Replacement Parts	TENSION ARM UNIT	CAPSTAN UNIT	PINCH ARM UNIT	CYLINDER UNIT	CYLINDER BASE UNIT	S POST UNIT	T POST UNIT	MECHANISM CHASSIS ASS'Y
TENSION POST ADJUSTMENT	○							
CAPSTAN TILT ADJUSTMENT		○						
T4 POST HEIGHT CONFIRMATION			○					
ENVELOPE OUTPUT ADJUSTMENT				○	○	○	○	○

3.2.2. TENSION POST ADJUSTMENT

Purpose: To maintain a constant tape tension so that the tape runs with stability.

Symptom of Misadjustment:
1. If the adjusted value is below the specification, the tape tension is not sufficient, thus causing a tape slack.
2. If the adjusted value is above the specification, the tape tension is too high, thus causing tape damage.

Equipment Required: Flat Headed (-) Screwdriver (Purchase Locally)

1. Without cassette tape, place the Mechanism in the PLAY Position (the Tension Post goes to the most left side) by applying DC Power Supply (3 V) to the Loading Motor terminal.
2. Confirm that there is a space of 0 mm±0.5 mm between the right edge of the Tension Post and the left edge of the S3 Post. If not, with Flat Headed (-) Screwdriver, adjust the Tension Adjust Pin so that the space of 0 mm±0.5 mm is made.

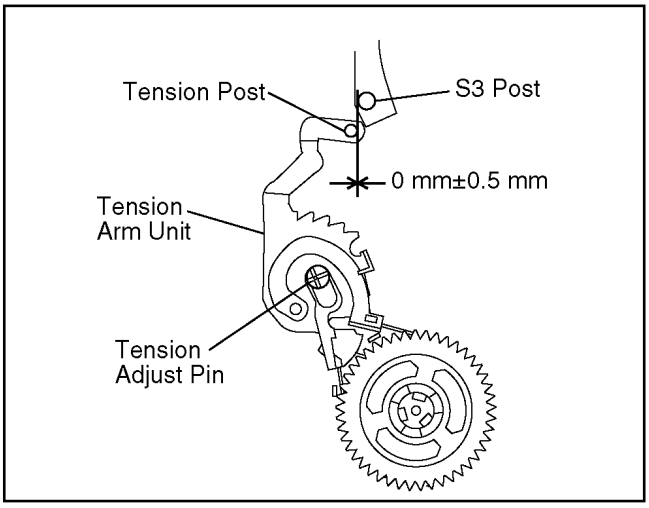


Fig. T1

3.2.3. T4 POST HEIGHT CONFIRMATION

Purpose: To confirm so that the height of the T4 Post is proper.

Symptom: If the height of the T4 Post is incorrect, the tape might be damaged.

1. To remove the Cassette Cover, refer to “Disassembly Method” of “CABINET SECTION” in DISASSEMBLY/ASSEMBLY PROSEDURES.
2. After removing the Cassette Cover, insert the tape without the Cassette Cover.
3. Confirm that the tape travels without curing at T4 post in both PLAY and REVIEW modes. If curing is apparent, replace the Pinch Arm Unit.

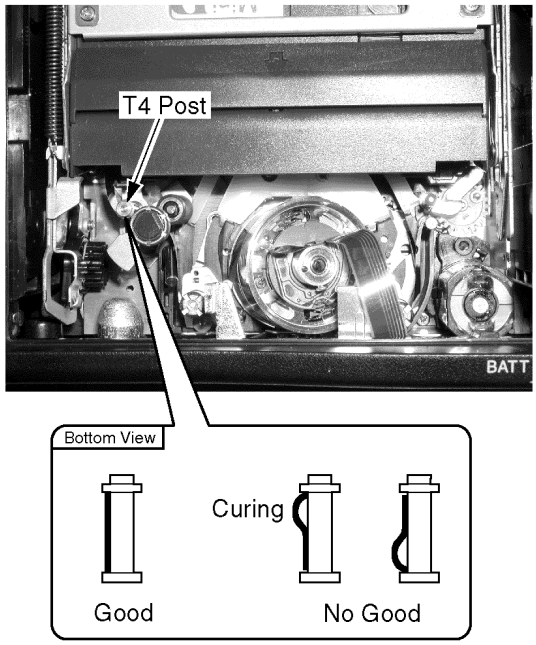
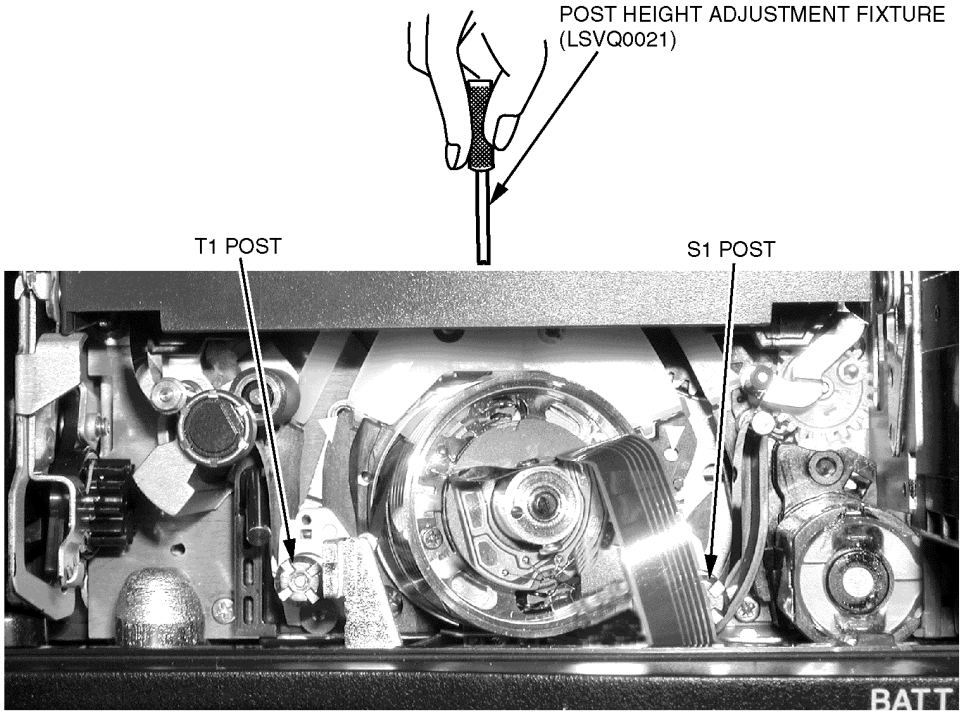
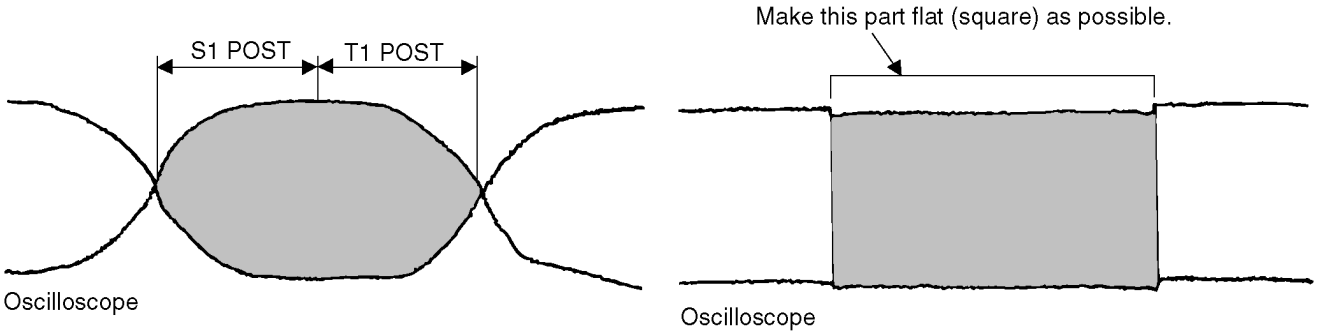


Fig. T2-1

3.2.4. ENVELOPE OUTPUT ADJUSTMENT

1. Connect the Camcorder and the Interface Board with Camera Connecting Cable.
2. Connect the oscilloscope to "Envelope TP" on the Interface Board.
3. Playback the Tape Path Alignment Tape (LSVQ0041).
4. Adjust the S1 post by turning the top of post with Post Height Adjustment Fixture (LSVQ0021) so that the left half of envelope signal becomes flat as possible.
5. Adjust the T1 post by turning the top of post with Post Height Adjustment Fixture (LSVQ0021) so that the right half of envelope signal becomes flat as possible.





Note:
After the adjustment, be sure to confirm BER (Bit Error Ratio) using EVR Adjustment Software.
If it is NG, try this adjustment once again.

3.3. ELECTRICAL ADJUSTMENT

3.3.1. INITIAL GUIDELINE

The table below shows which adjustments are necessary according to the unit parts and individual parts to be replaced. Make sure to perform these adjustments shown below as necessary.

Adjustment Item \ Replacement Parts		MAIN C.B.A.	IC3002 (VIDEO/AUDIO SIGNAL PROCESS)	IC6007 (EEPROM)	IC6009 (DAC)	LCD C.B.A.	IC8001(LCD RGB SIGNAL PROCESS)	LCD UNIT	CYLINDER UNIT
VIDEO	Sensitivity Adjustment of Tape sensors	◯		◯					
	PG shifter Adjustment	◯		◯					◯
	Luminance Level Adjustment	◯	◯	◯					
	Color Level Adjustment	◯	◯	◯					
LCD	PLL Adjustment	◯		◯		◯	◯	◯	
	Pedestal Level Adjustment	◯		◯		◯	◯	◯	
	RB Sub Pedestal Level Adjustment	◯		◯		◯	◯	◯	
	COM Level Adjustment	◯		◯		◯	◯	◯	
	White Balance Adjustment	◯		◯		◯	◯	◯	

Note: ◯ : Adjustment Item

3.3.2. TEST EQUIPMENT

1. Dual-Trace Oscilloscope
   Voltage Range: 0.001 to 50 V/Div.
   Frequency Range: DC to 50 MHz
   Probes: 10:1, 1:1
2. Frequency Counter
3. Vectorscope
4. Plastic Tip Driver
5. Personal Computer
   PC: IBM PC/AT or compatible
   OS: MS-DOS or MS-Windows
   CPU: 486 or higher
   Drive: 3.5 inch 1.44 MB floppy disk drive
   Port: D-Sub-9-pin Serial or D-Sub-25-pin Serial
   Monitor: VGA Color
6. PC-EVR Adjustment Program (VFK1820A)
   Note:
   Ask latest version when placing order for PC-EVR Adjustment program.
7. Interface Board (LSUP0007)
8. RS-232C Cable
9. Color Bar Standard Tape (VFM3110EDS)
   (Keeping condition: Keep at 18 °C ~ 28 °C)
10. AC Adaptor (for DVC)

3.3.3. PREPARATION

1. Insert a flat headed (-) Screwdriver or similar object into the hole, remove the EVR Cover.

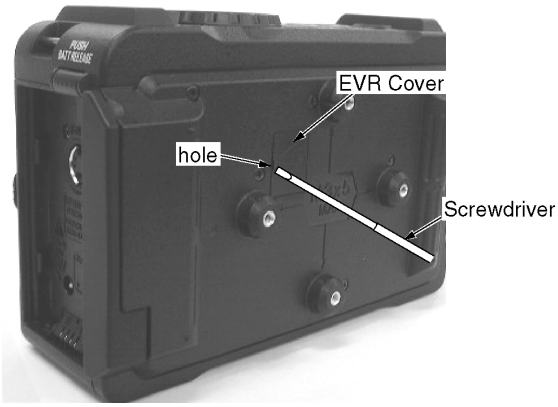


Fig. E1-1

2. Connect the Camera Connecting Cable to P101 and P102 on the Interface Board.

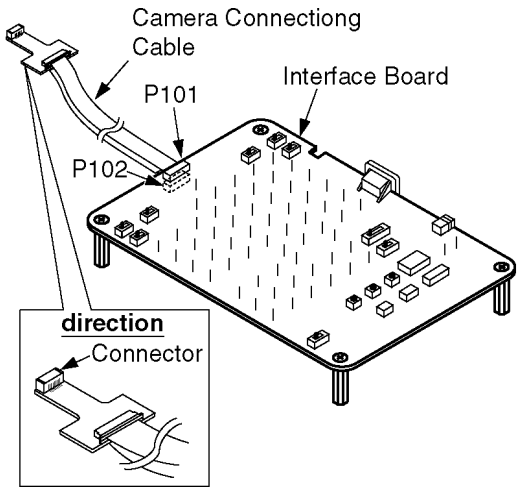


Fig. E1-2

Note:

Install Camera Connecting Cable so that the Connector is upward as shown.

3. Connect the Camera Connecting Cable to the Connector B2 on the Main C.B.A.

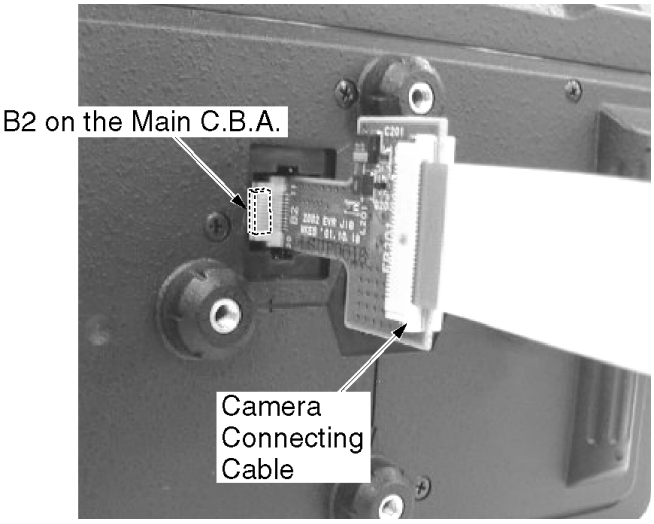


Fig. E1-3

4. Connect the AC Adaptor to the unit.
5. Connect the P106 on the Interface Board to RS232C of the PC with Inter Link Cable.
6. Set the SW115 (M103 EXMOD1) on the Interface Board to "GND."
7. Set the SW110 (RS232C SEL) on the Interface Board to "DSUB."
8. Set the SW114 (M103 VPP) on the Interface Board to "3V."
9. Set the SW103 (RECI) on the Interface Board to "OFF."
10. Set the SW108 (BST TEST) on the Interface Board to "OFF."
11. Set the SW109 (IRIS) on the Interface Board to center.
12. Set the SW111 (5V SEL) on the Interface Board to "CAM 5V."
13. Set the SW113 (POWER ON) on the Interface Board to "NORM."
14. Power on the unit.

<Computer Assisted Adjustment System>

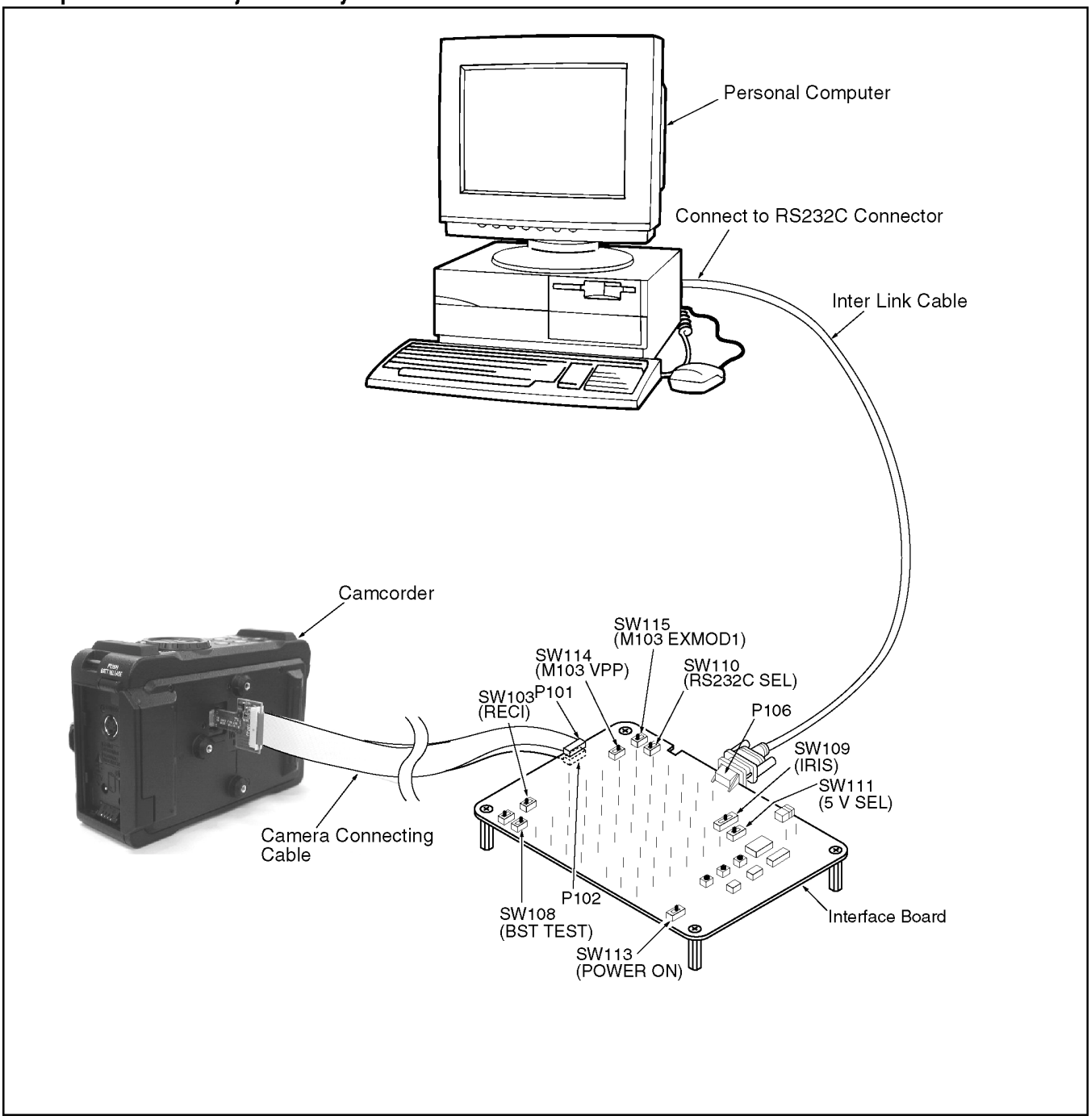


Fig. E1-4

3.3.4. SET UP OF PC-EVR ADJUSTMENT PROGRAM

1. Turn on the Personal Computer.

   MS-Windows will be set up automatically.

2. Restart it in MS-DOS mode.

3. Change the current directory to the one including the PC-EVR Adjustment Program and start up the PC-EVR Adjustment Program as follows.

   a. If MS-DOS is Japanese mode, input "us," and then press "ENTER" key to be US mode on.

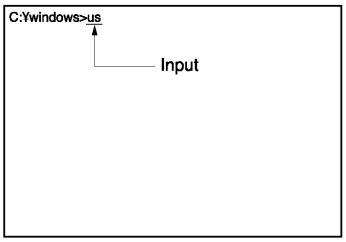


Fig. E2-1

   b. Input "cd *****," and then press "ENTER" key to change the directory to the one including the PC-EVR Adjustment Program.

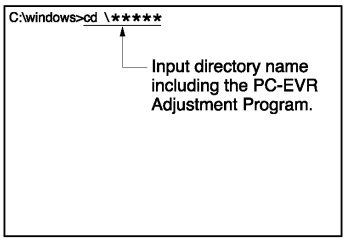


Fig. E2-2

   c. Input "DV1DC," and then press "ENTER" key to start up the PC-EVR Adjustment Program.

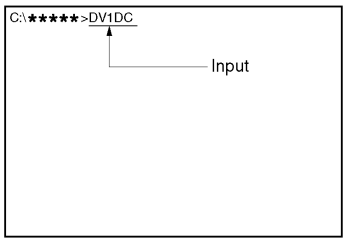


Fig. E2-3

4. Perform set up items according to menu until "Main Menu" is displayed.

3.3.5. HOW TO USE MAIN MENU

3.3.5.1. Main Menu

Select a Sub Menu to check, adjust the unit. by pressing ↑ ↓ (UP/DOWN) Key in Main Menu. Then, press "ENTER" Key. The Sub Menu will be displayed.

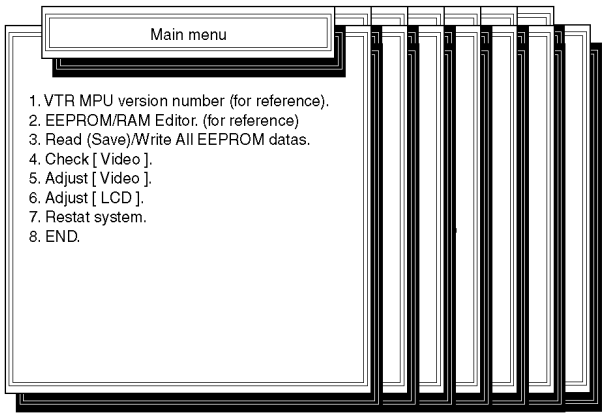

Main menu
1. VTR MPU version number (for reference).
2. EEPROM/RAM Editor. (for reference)
3. Read (Save)/Write All EEPROM datas.
4. Check [Video].
5. Adjust [Video].
6. Adjust [LCD].
7. Restat system.
8. END.

Fig. E3-1

With using ← → key, you can also see sub menu in order.

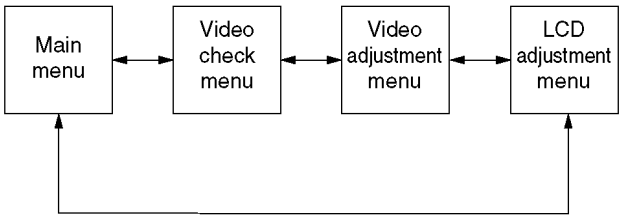


Fig. E3-2

Note:

The adjusted data is stored to EEPROM IC after each adjustment.

3.3.6. INTRODUCTION OF THE SUB MENU

3.3.6.1. Video Check Menu

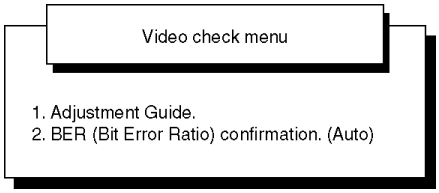


Fig. E4-1

3.3.6.2. Video Adjustment Menu

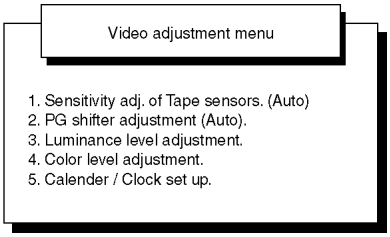

Video adjustment menu
1. Sensitivity adj. of Tape sensors. (Auto)
2. PG shifter adjustment (Auto).
3. Luminance level adjustment.
4. Color level adjustment.
5. Calender / Clock set up.

Fig. E-4-2

3.3.6.3. LCD Adjustment Menu

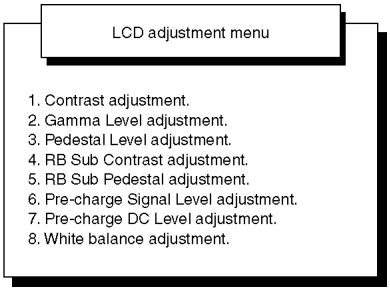

LCD adjustment menu
1. Contrast adjustment.
2. Gamma Level adjustment.
3. Pedestal Level adjustment.
4. RB Sub Contrast adjustment.
5. RB Sub Pedestal adjustment.
6. Pre-charge Signal Level adjustment.
7. Pre-charge DC Level adjustment.
8. White balance adjustment.

Fig. E4-3

3.3.7. RESTORATION OF CONNECTING ERROR

This program checks connecting condition with the movie all the time.

When the movie power is off, or VTR is reset, or cable is disconnected during servicing, restart the program by pressing “CTRL” key and “BREAK” key together.

3.3.8. WAVEFORM ILLUSTRATION

This program displays the waveform illustration, when “F2” key is pressed in the adjustment mode.

3.4. EEPROM

All adjustment data have been stored in the EEPROM.

There is an EEPROM in this unit as shown in the table below.

EEPROM LOCATION

C.B.A.	EEPROM IC Ref. No.
VTR Main C.B.A.	IC6007

Be sure to save both the EEPROM data into the personal computer before performing service and adjustment, in order to avoid any accidental data loss.

3.4.1. HOW TO SAVE VTR MAIN EEPROM DATA

1. Select “3. Read [Save]/Write All EEPROM data” in the Video check menu, and then press the “Enter” key.
2. Select “2. Save all EEPROM data” in Read [Save]/Write All EEPROM data menu, and then press the “Enter” key.
3. Input the File name, and then press “Enter” key.

   The data of EEPROM (IC6007) will be stored in the personal computer.

3.4.2. HOW TO REWRITE SAVED DATA

When it becomes impossible to adjust during service and adjustment, rewrite the saved data which stored in paragraphs 3.3.5. to EEPROM as follows. And readjust.

3.4.3. HOW REWRITE VIDEO C.B.A. SAVED DATA

1. Select “3. Read [Save]/Write All EEPROM data” in the Video check menu, and then press the “Enter” key.
2. Select “3. Writing from the stored data files” in the Read [Save]/Write All EEPROM data menu, and then press “Enter” key.
3. Input the saved file name, and then press the “Enter” key.
4. The data will be written in EEPROM (IC6007).

3.5. C.B.A. REPLACEMENT

3.5.1. VTR MAIN C.B.A.

In case that the VTR Main C.B.A. is replaced, be sure to write the data to EEPROM (IC6007) on the VTR Main C.B.A. as follows.

1. Select “3. Read [Save]/Write All EEPROM data” in the Video check menu, and then press the “Enter” key.
2. Select “3. Writing from stored data files.” in Read [Save]/Write All EEPROM data menu, and then press the “Enter” key. Input the saved file name, and then press the “Enter” key.

   OR;

   Select “4. Writing of fixed/average values,” and then press the “Enter” key. And press the “Enter” key once again. Then, input ID Number as follows.

3.5.2. HOW TO INPUT ID NUMBER

When writing the data to the EEPROM (IC6007) after replacing VTR Main C.B.A.;

When selecting “4. Writing of fixed/average values,” ID Number need to be input.

When selecting “3. Writing from stored data files,” ID Number stored data file will be written automatically.

When writing ID Number from the saved data which is stored in 3.4.1. :

1. Select “3. Read [Save]/Write All EEPROM data” in the Video check menu, and then press the “Enter” key.
2. Select “5. Writing ID from the stored file.” In Read [Seve]/Write All EEROM data menu, and then press the “Enter” key. Input the saved file name, and then press the “Enter” key.

   The ID Number will be written automatically.

When the original ID information can not be read because of the destruction of EEPROM etc.:

1. Select “4. Adjust [Video].” In Main menu, and then press “Enter” key.
2. Select “9. Write products ID” in the Video adjustment menu, and then press the “Enter” key.
3. ID Number will be written automatically.

Note:

The adjusted data has been written to the EEPROM after each adjustments.

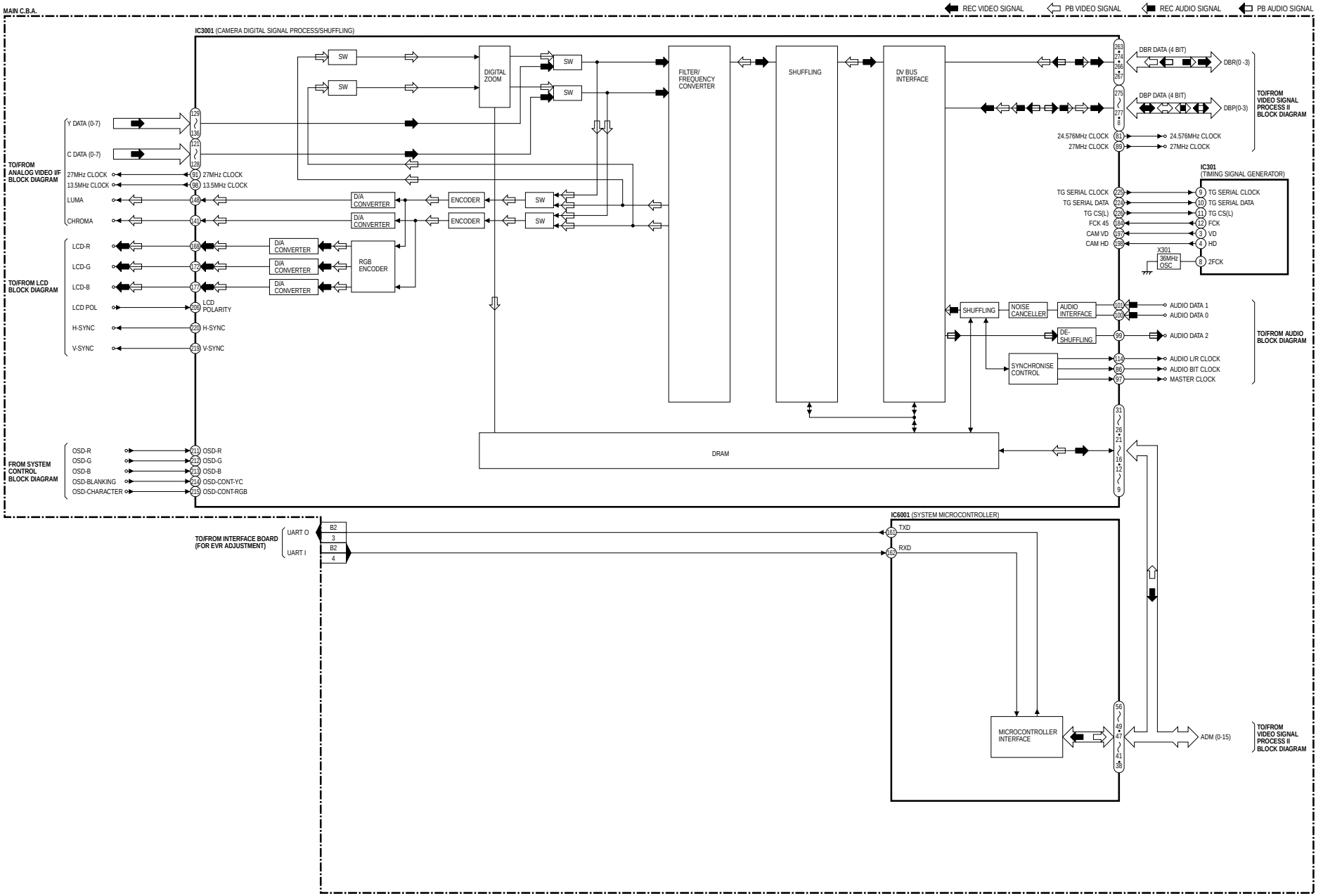
SECTION 4

BLOCK DIAGRAMS

CONTENTS

VIDEO SIGNAL PROCESS I BLOCK DIAGRAM BLK-1
VIDEO SIGNAL PROCESS II BLOCK DIAGRAM BLK-2
ANALOG VIDEO I/F BLOCK DIAGRAM BLK-3
AUDIO SIGNAL PROCESS BLOCK DIAGRAM BLK-4
SYSTEM CONTROL BLOCK DIAGRAM BLK-5
SERVO BLOCK DIAGRAM BLK-6
LCD BLOCK DIAGRAM BLK-7
POWER SUPPLY BLOCK DIAGRAM BLK-8

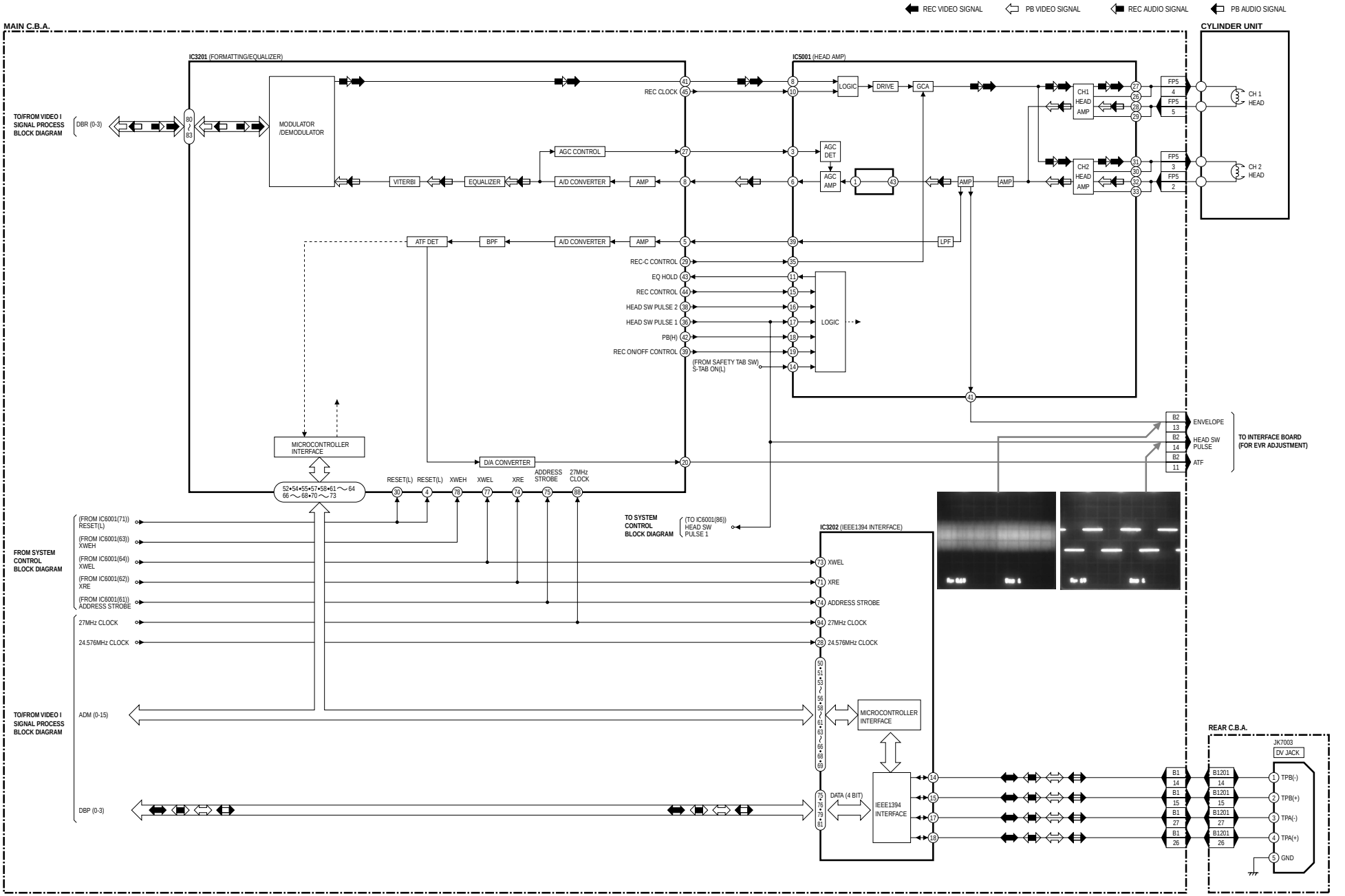
VIDEO SIGNAL PROCESS I BLOCK DIAGRAM



BLK-1

VIDEO SIGNAL PROCESS I BLOCK DIAGRAM
AG-DV1DC

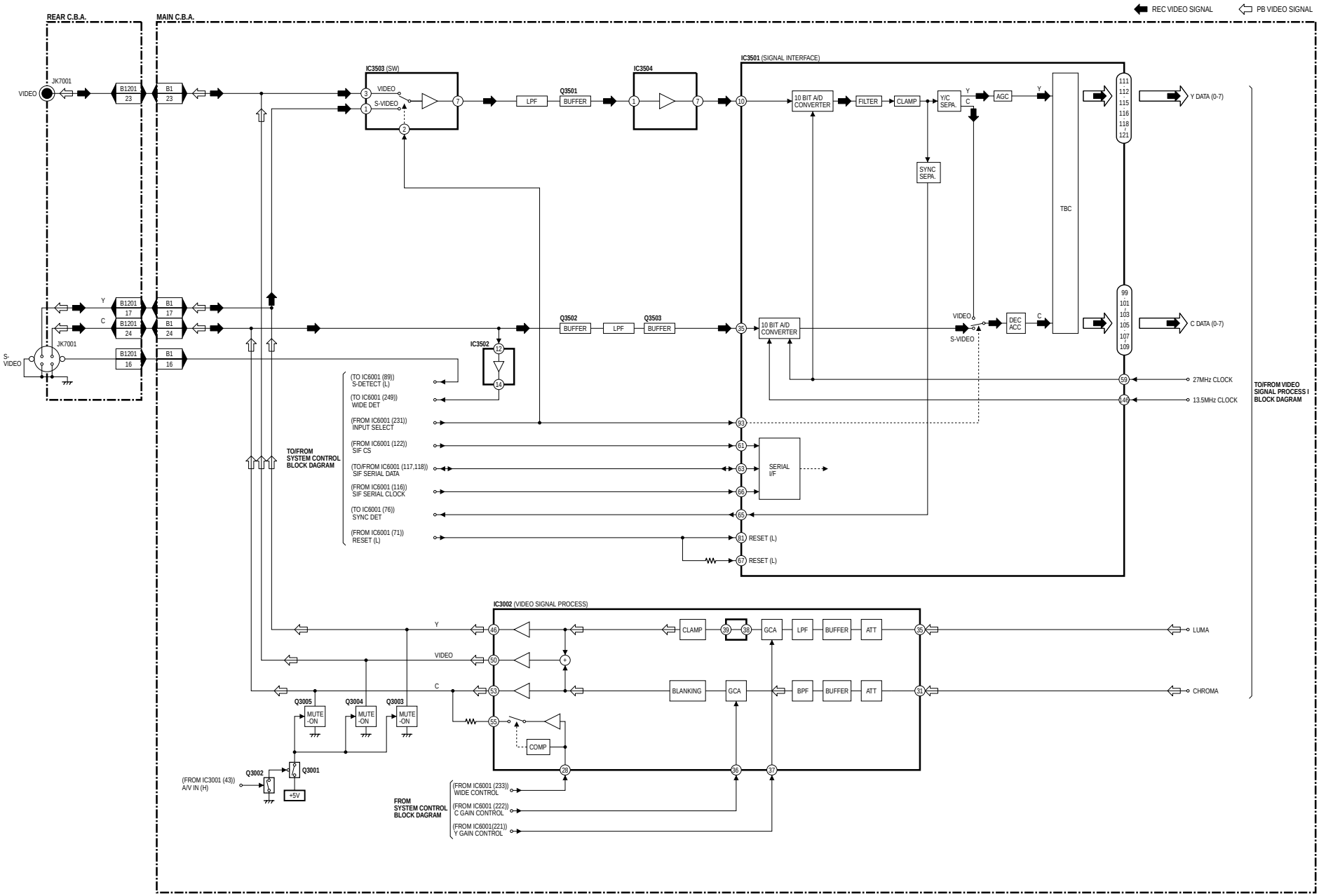
VIDEO SIGNAL PROCESS II BLOCK DIAGRAM



BLK-2

VIDEO SIGNAL PROCESS II BLOCK DIAGRAM
AG-DV1DC

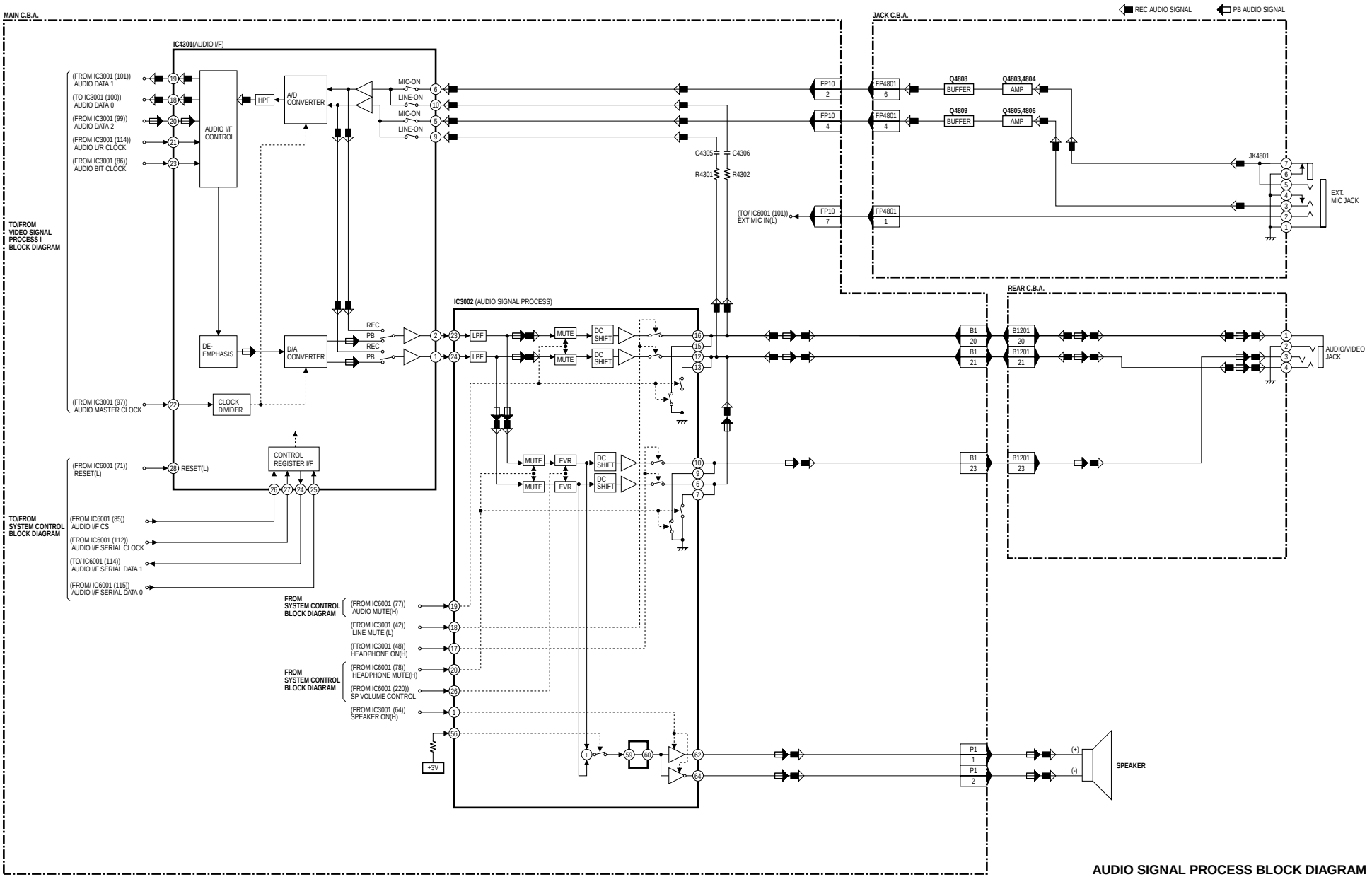
ANALOG VIDEO I/F BLOCK DIAGRAM



BLK-3

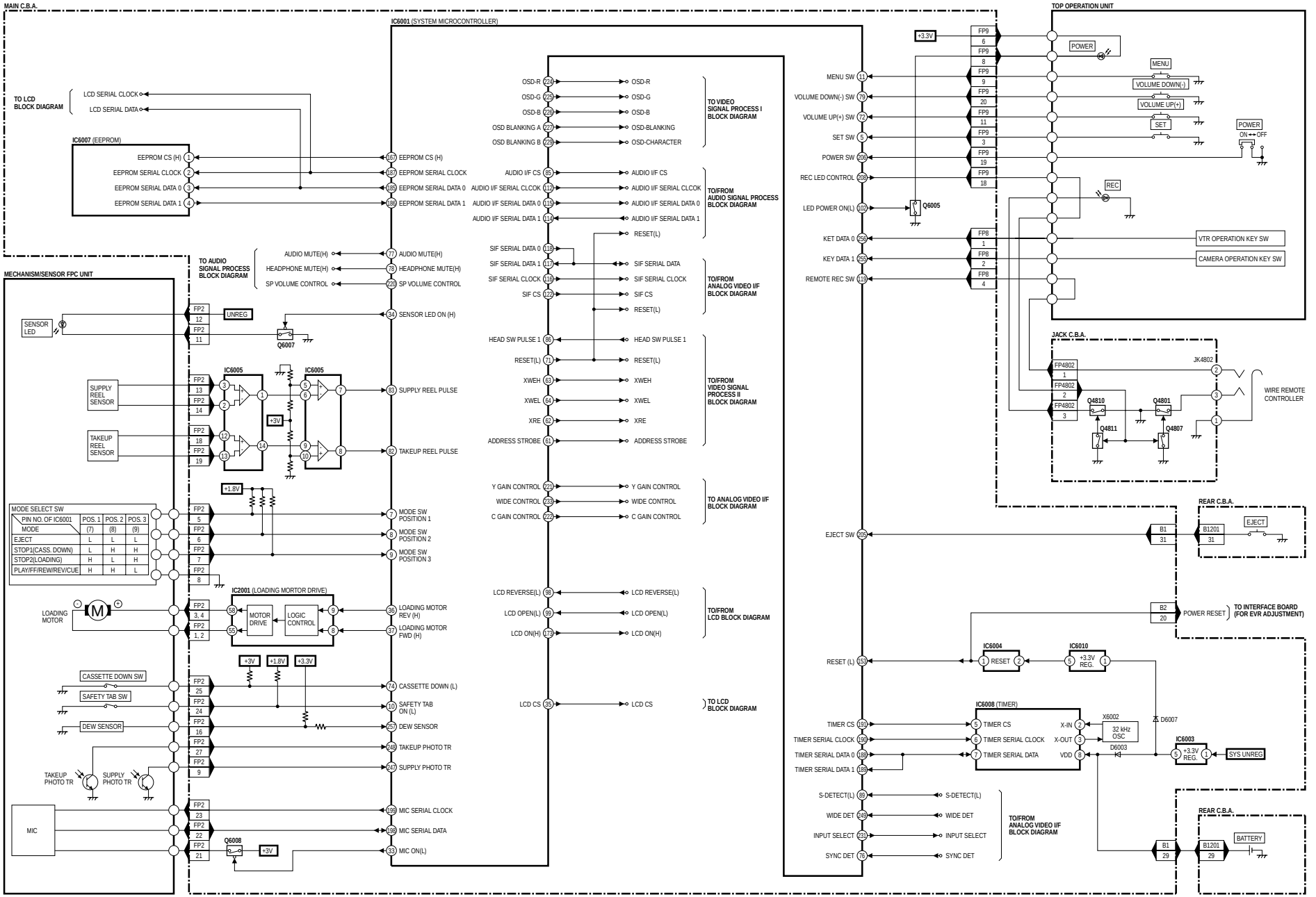
ANALOG VIDEO I/F BLOCK DIAGRAM
AG-DV1DC

AUDIO SIGNAL PROCESS BLOCK DIAGRAM



AUDIO SIGNAL PROCESS BLOCK DIAGRAM
AG-DV1DC

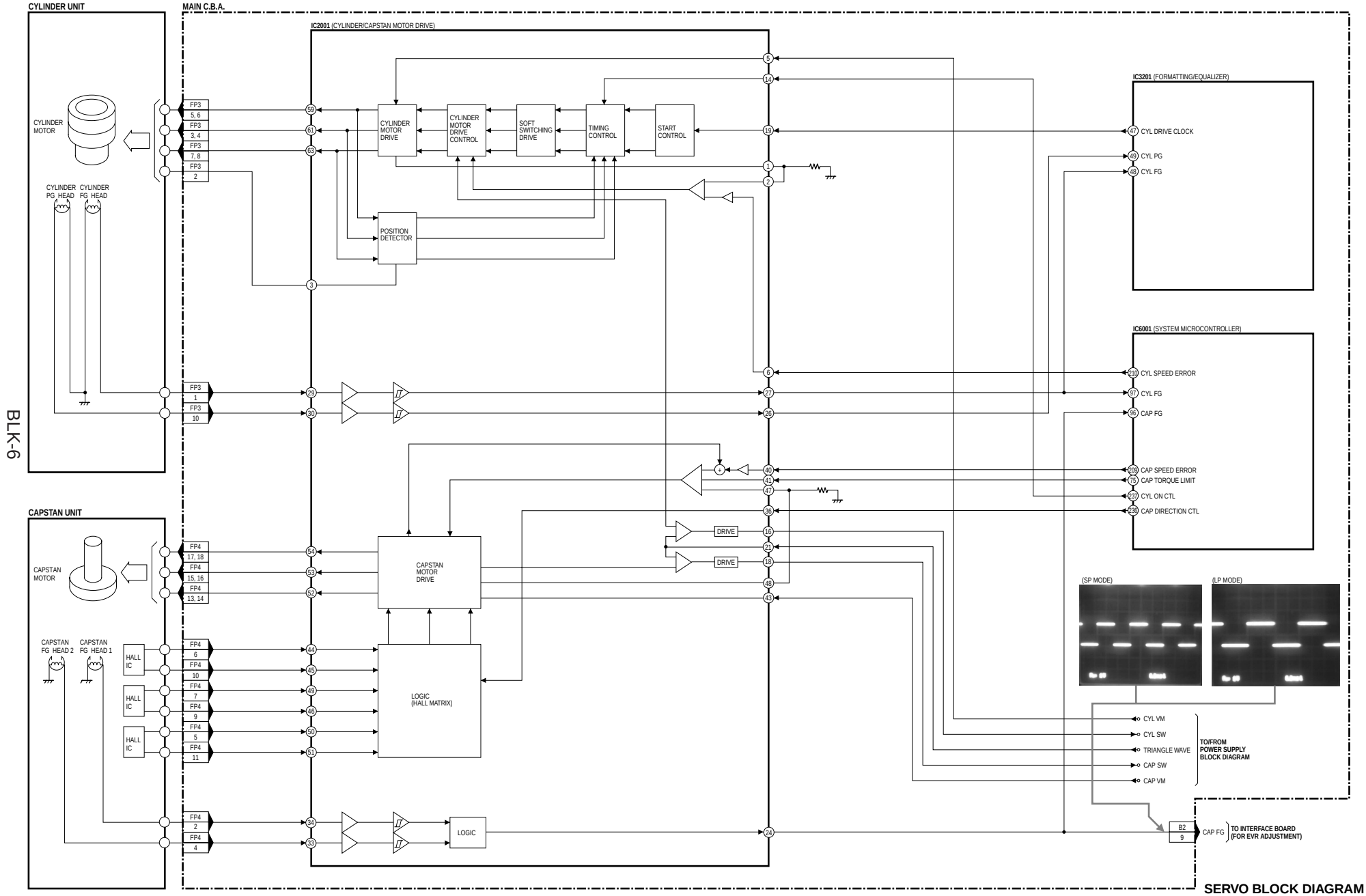
SYSTEM CONTROL BLOCK DIAGRAM



BLK-5

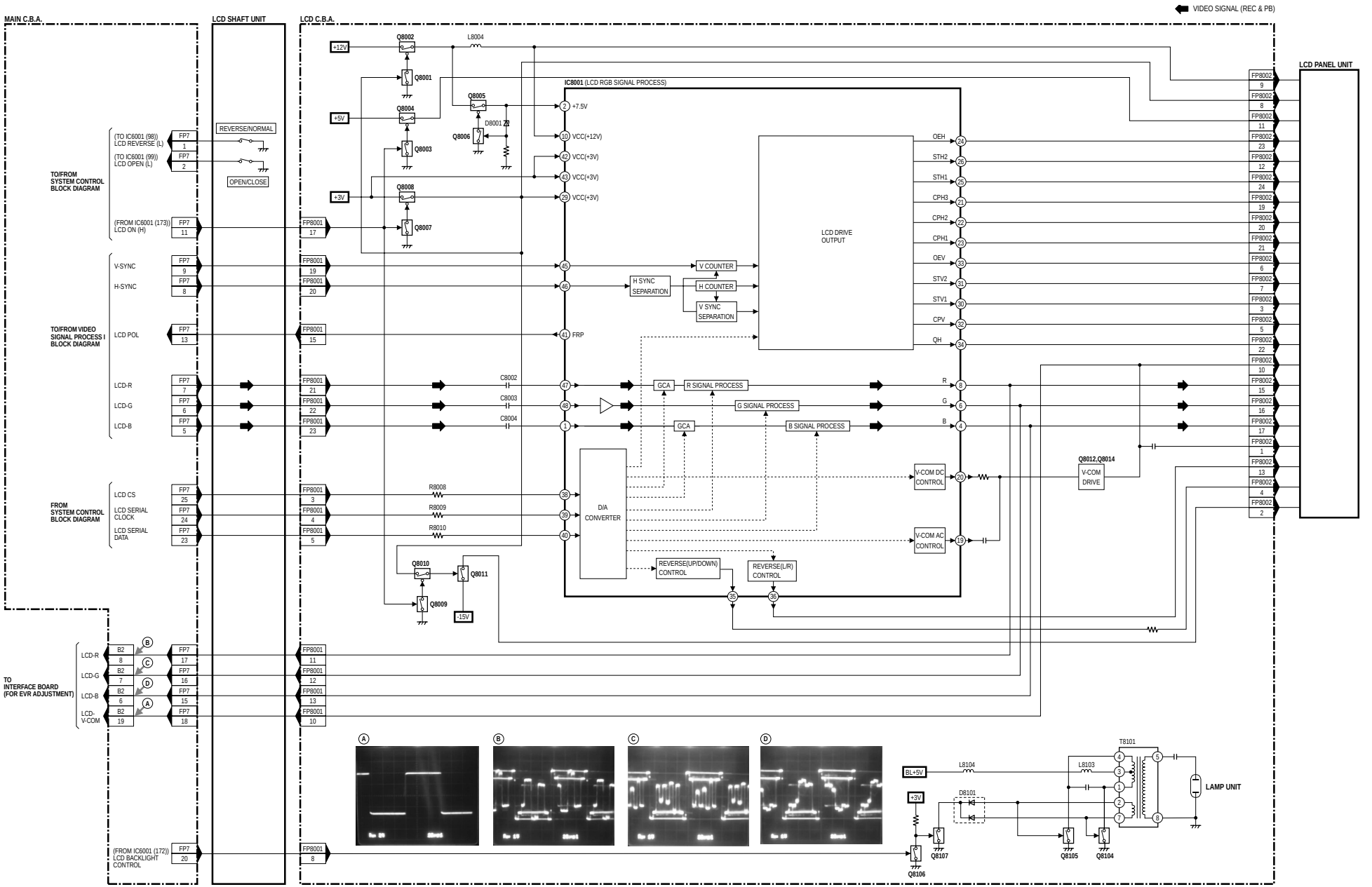
SYSTEM CONTROL BLOCK DIAGRAM
AG-DV1DC

SERVO BLOCK DIAGRAM



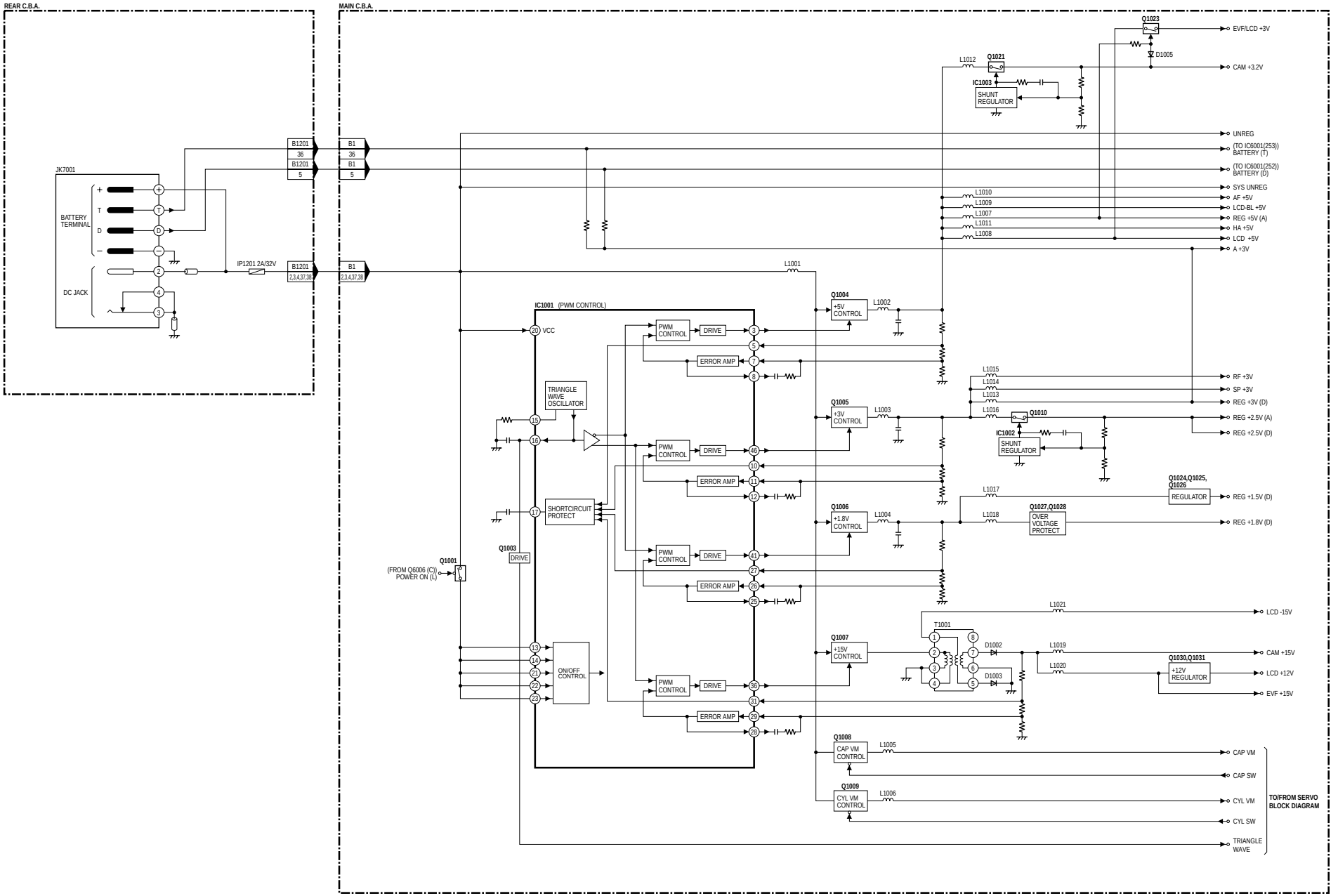
SERVO BLOCK DIAGRAM
AG-DV1DC

LCD BLOCK DIAGRAM



LCD BLOCK DIAGRAM
AG-DV1DC

POWER SUPPLY BLOCK DIAGRAM

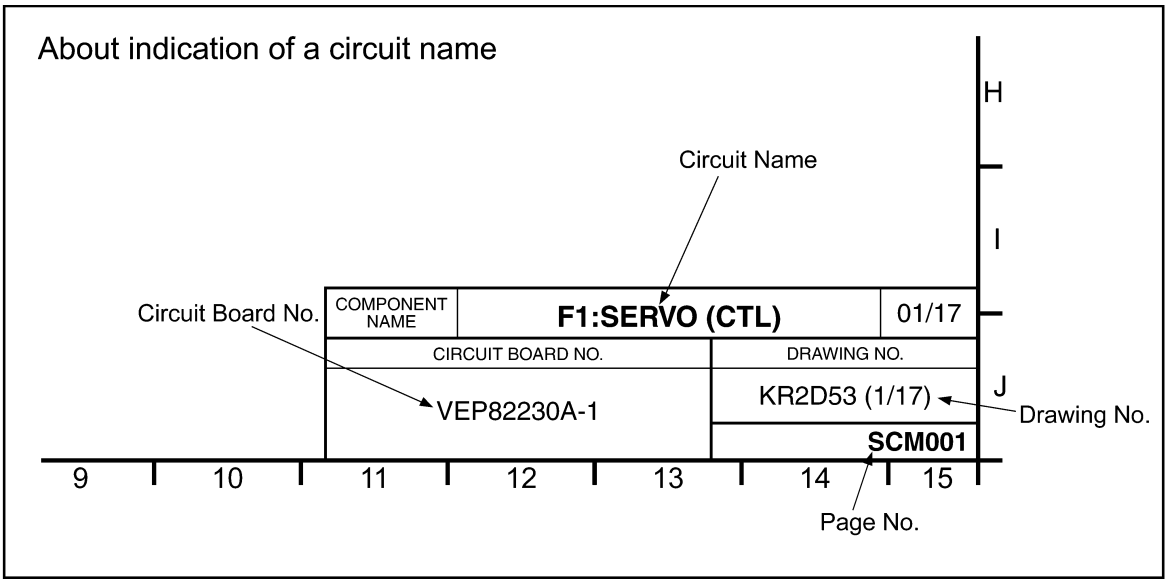


BLK-8

POWER SUPPLY BLOCK DIAGRAM
AG-DV1DC

SECTION 5

SCHEMATIC DIAGRAMS



NOTE:
BE SURE TO MAKE YOUR ORDERS OF REPLACEMENT PARTS ACCORDING TO PARTS LIST, SECTION 7

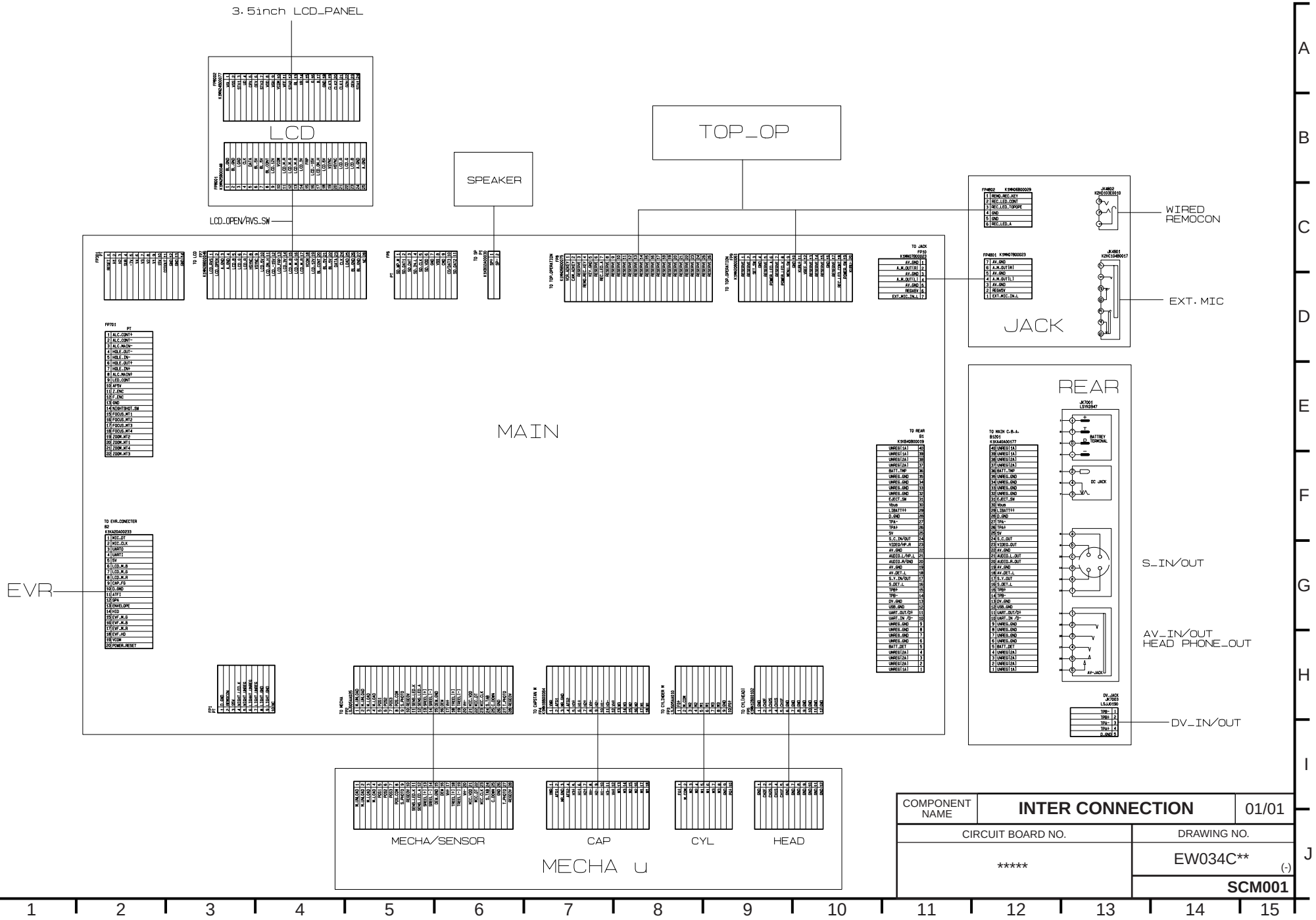
CAUTION

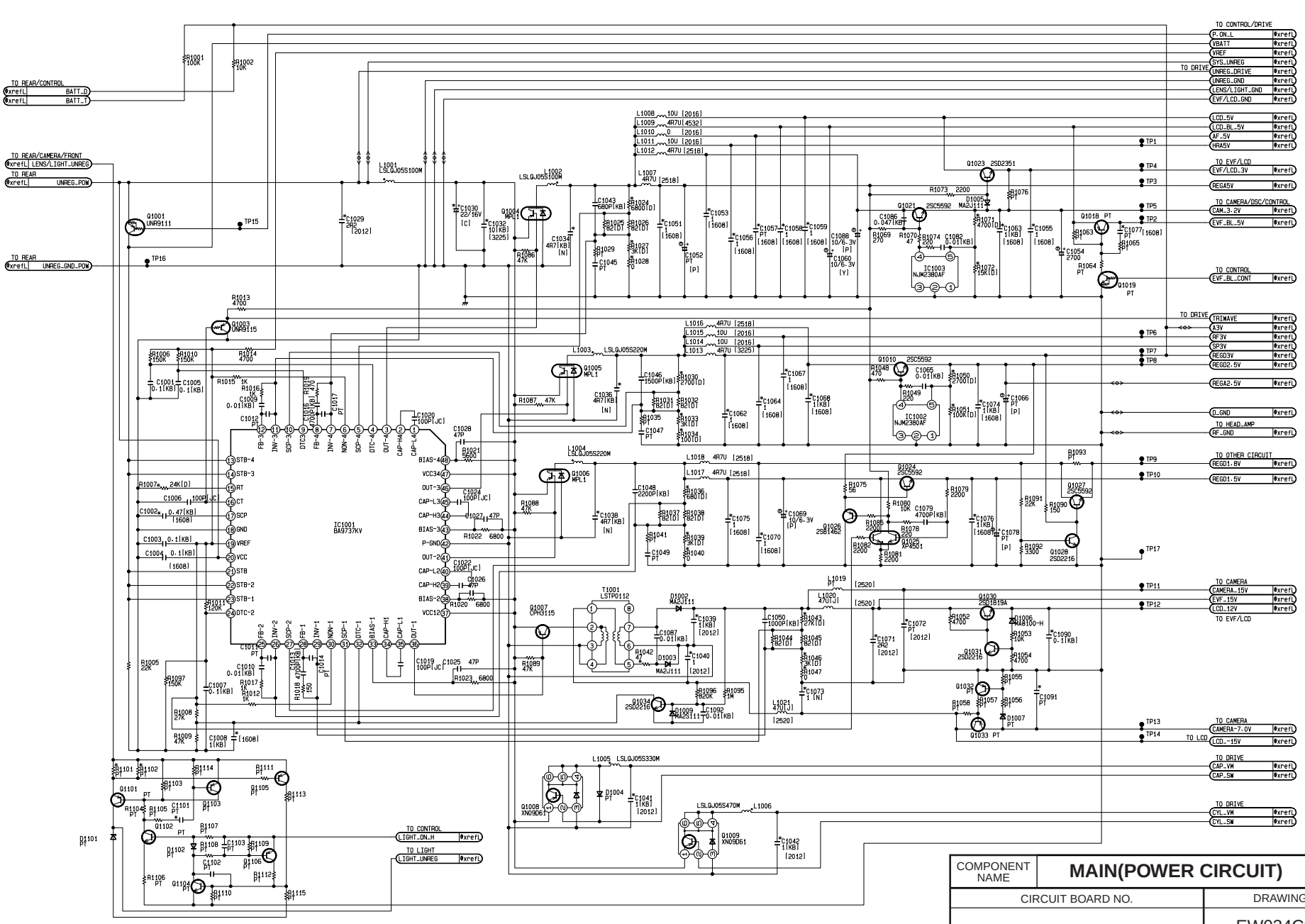
THE ▭ MARK INDICATES THE PRIMARY CIRCUIT TO DISTINGUISH THE PRIMARY FROM THE SECONDARY CIRCUIT.
PAY ATTENTION NOT TO RECEIVE AN ELECTRIC SHOCK DURING REPAIR AND SERVICE OF THE PRODUCTS.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

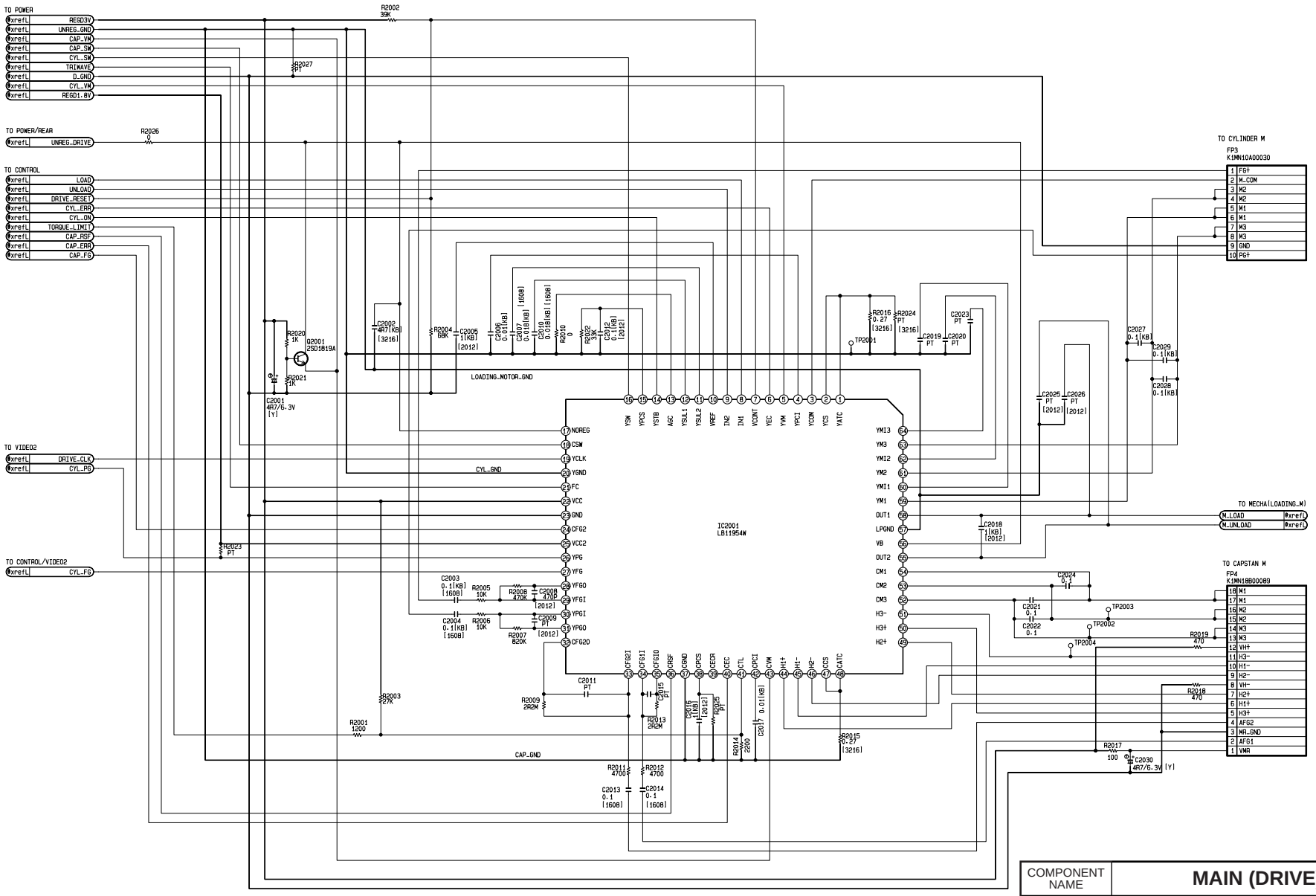
CONTENTS

INTER CONNECTION SCM001
MAIN.....SCM002
REAR SCM016
JACK UNIT.....SCM017
LCD DRIVE (3.5inch) SCM018
Top Operation SCM019
LCD SW C.B.A.....SCM019

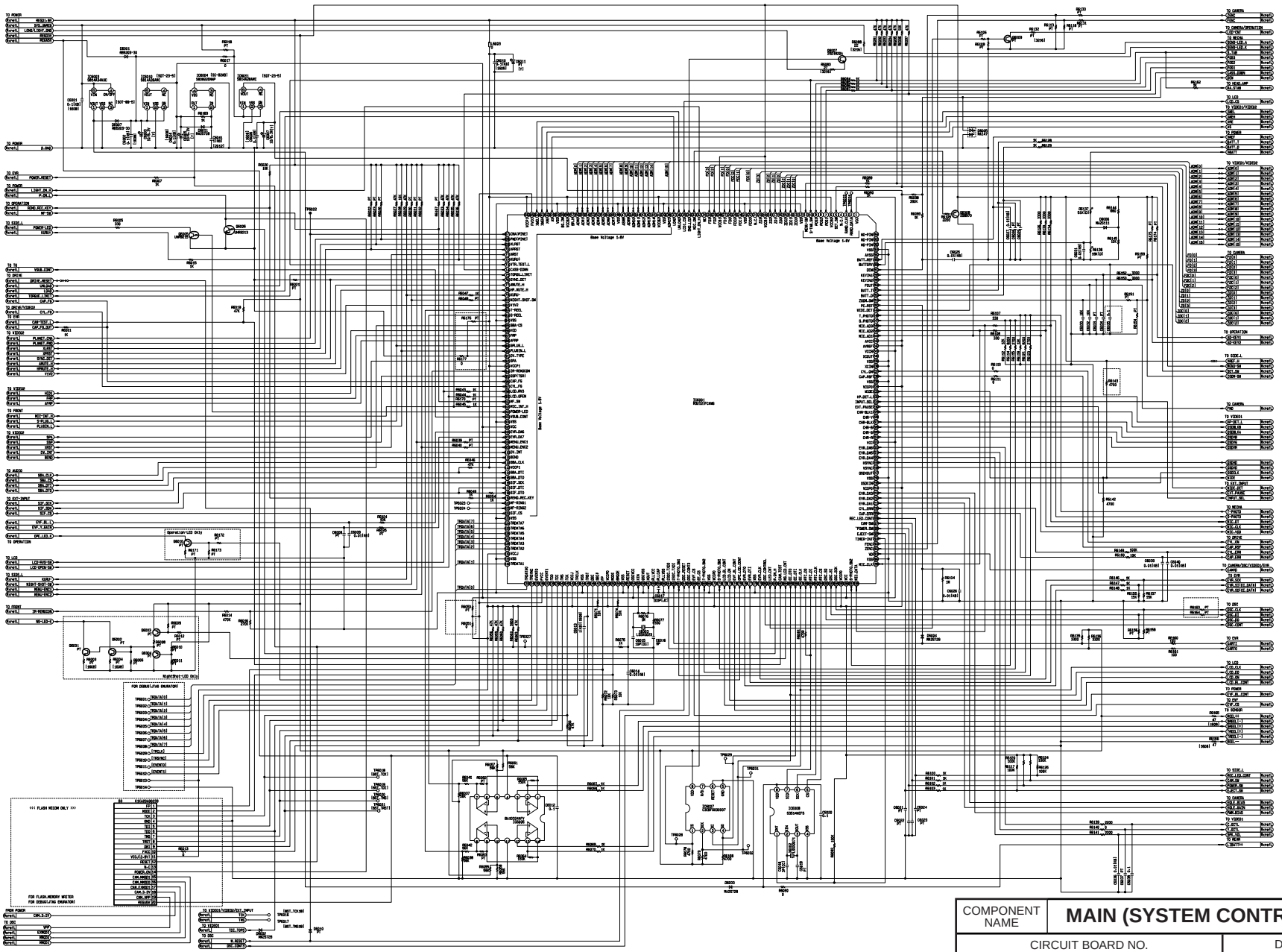

3.5inch LCD_PANEL
LCD
LCD_OPEN/RVS_SW
SPEAKER
TOP_OP
WIRED REMOCON
EXT. MIC
JACK
REAR
S_IN/OUT
AV_IN/OUT
HEAD PHONE_OUT
DV_IN/OUT
MAIN
EVR
MECHA/SENSOR
CAP
CYL
HEAD
MECHA u
COMPONENT NAME
INTER CONNECTION
01/01
CIRCUIT BOARD NO.
*****
DRAWING NO.
EW034C**
(-)
SCM001



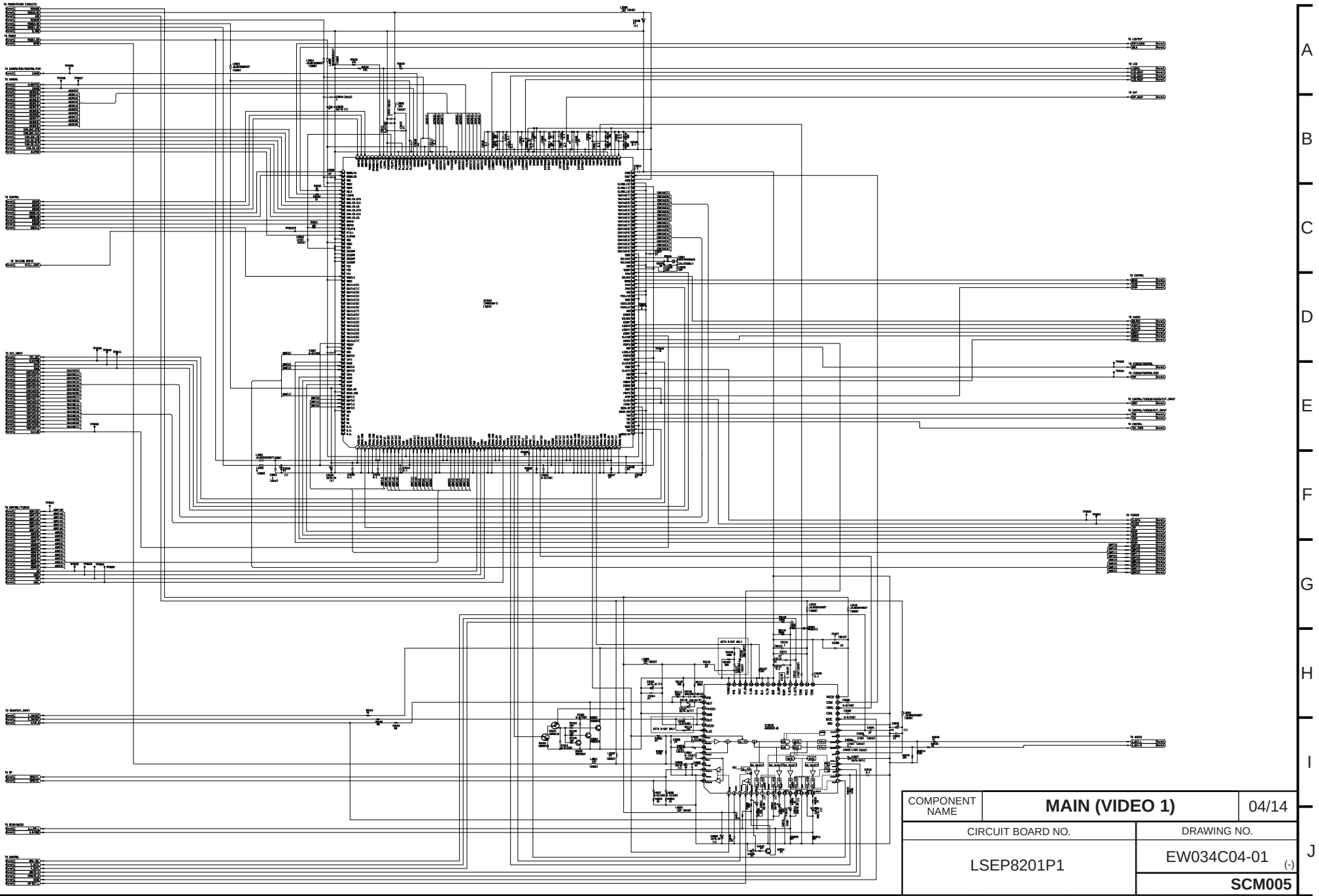
COMPONENT NAME	**MAIN(POWER CIRCUIT)**	01/14
CIRCUIT BOARD NO.	DRAWING NO.	
LSEP8201P1	EW034C01-01 (-)	
	SCM002	



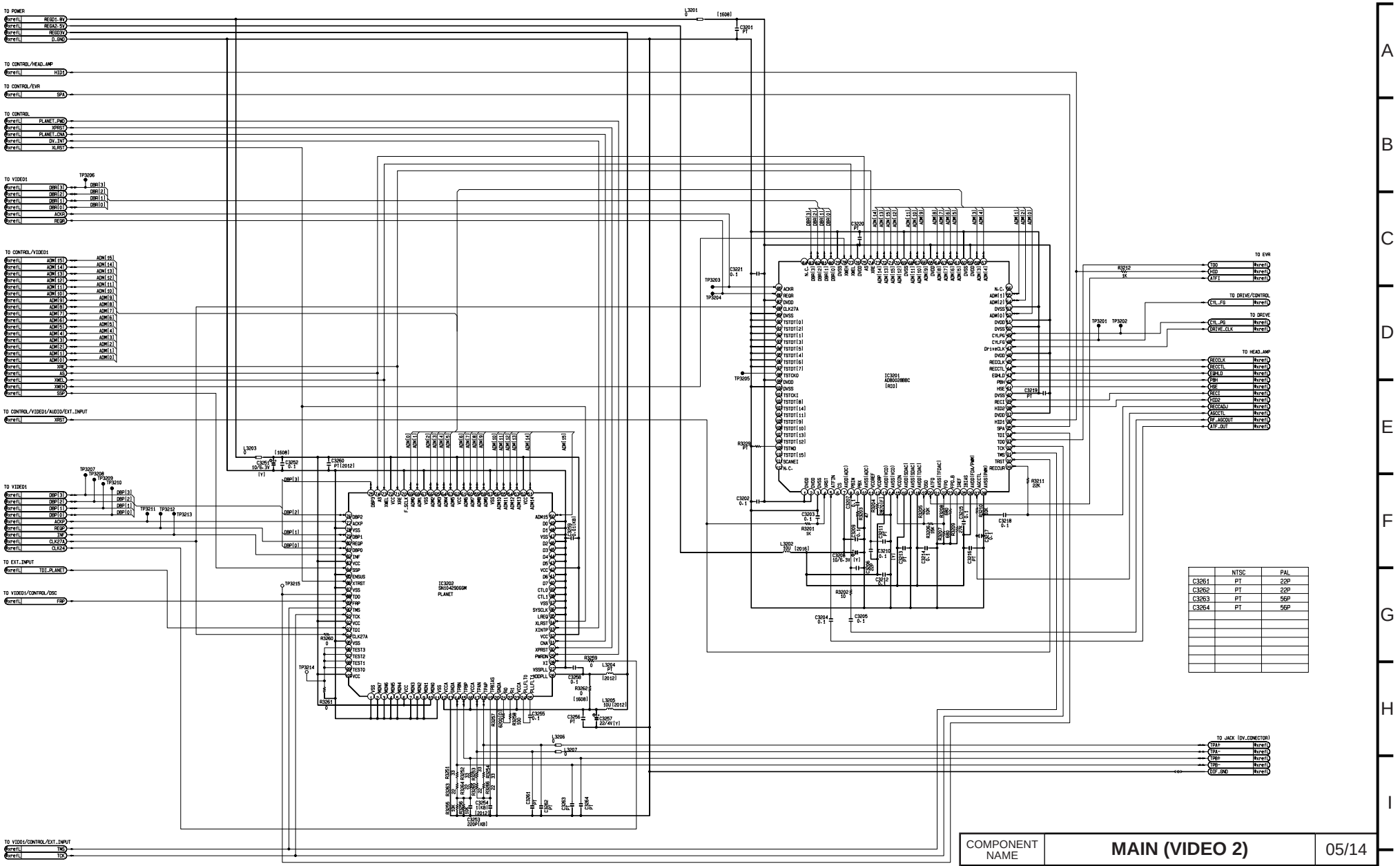
COMPONENT NAME	MAIN (DRIVE)	02/14
CIRCUIT BOARD NO.	DRAWING NO.	
LSEP8201P1	EW034C02-01 (-)	
	SCM003	



COMPONENT NAME	**MAIN (SYSTEM CONTROL)**	03/14
CIRCUIT BOARD NO.	DRAWING NO.	
LSEP8201P1	EW034C03-01 (-)	
	SCM004	

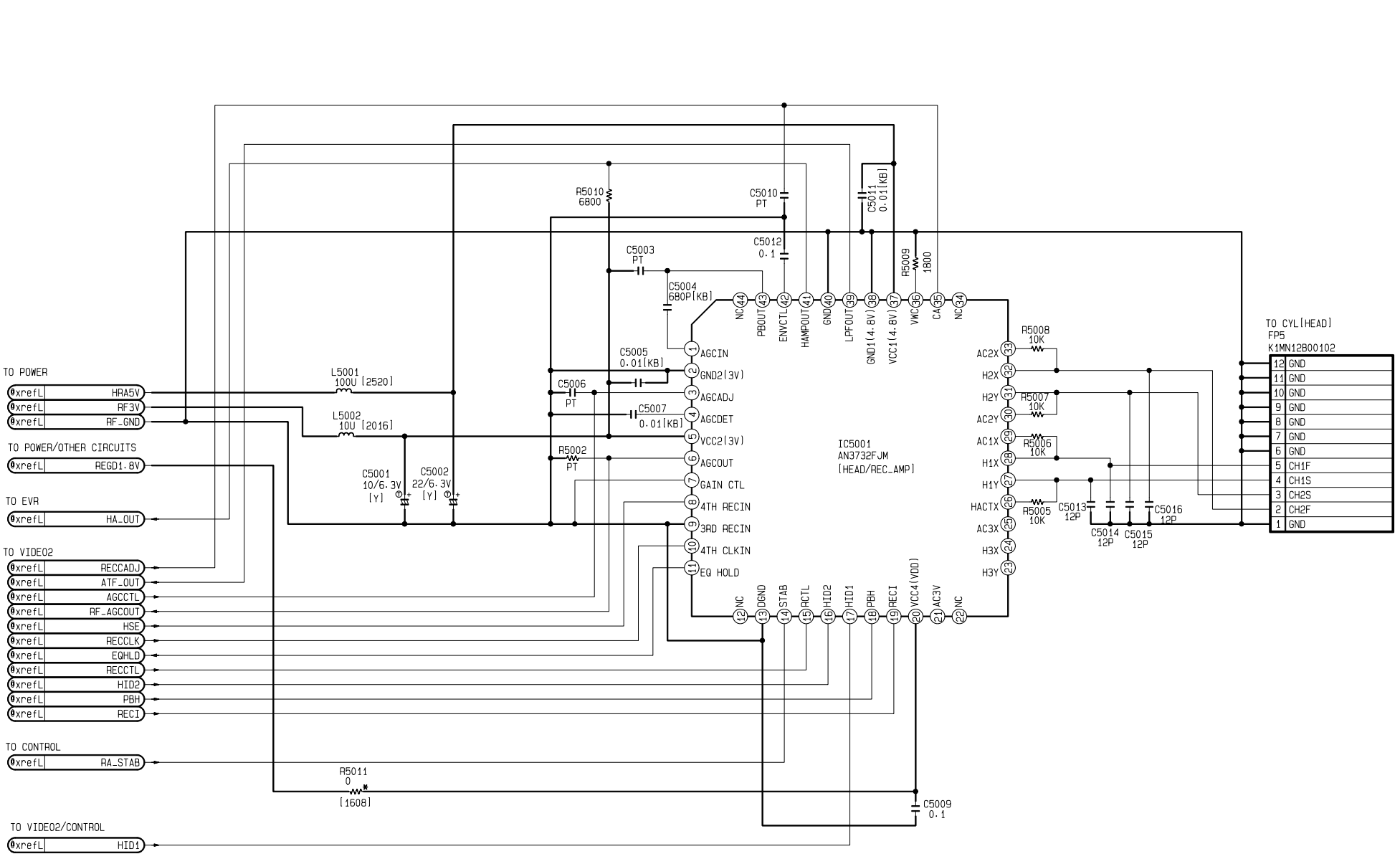


COMPONENT NAME	MAIN (VIDEO 1)	04/14
CIRCUIT BOARD NO.		DRAWING NO.
LSEP8201P1		EW034C04-01 (-)
		SCM005

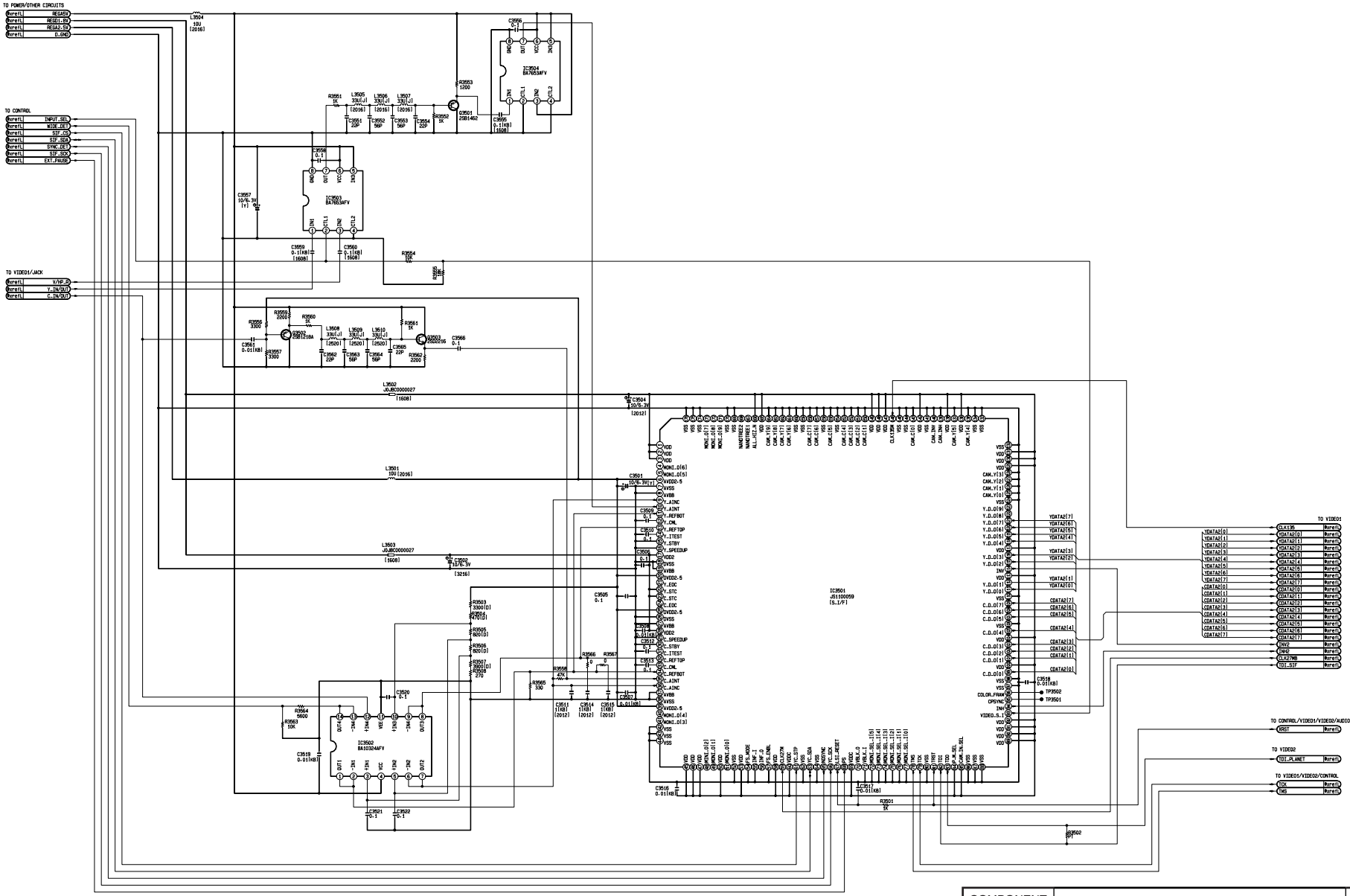


	NTSC	PAL
C3261	PT	22P
C3262	PT	22P
C3263	PT	56P
C3264	PT	56P

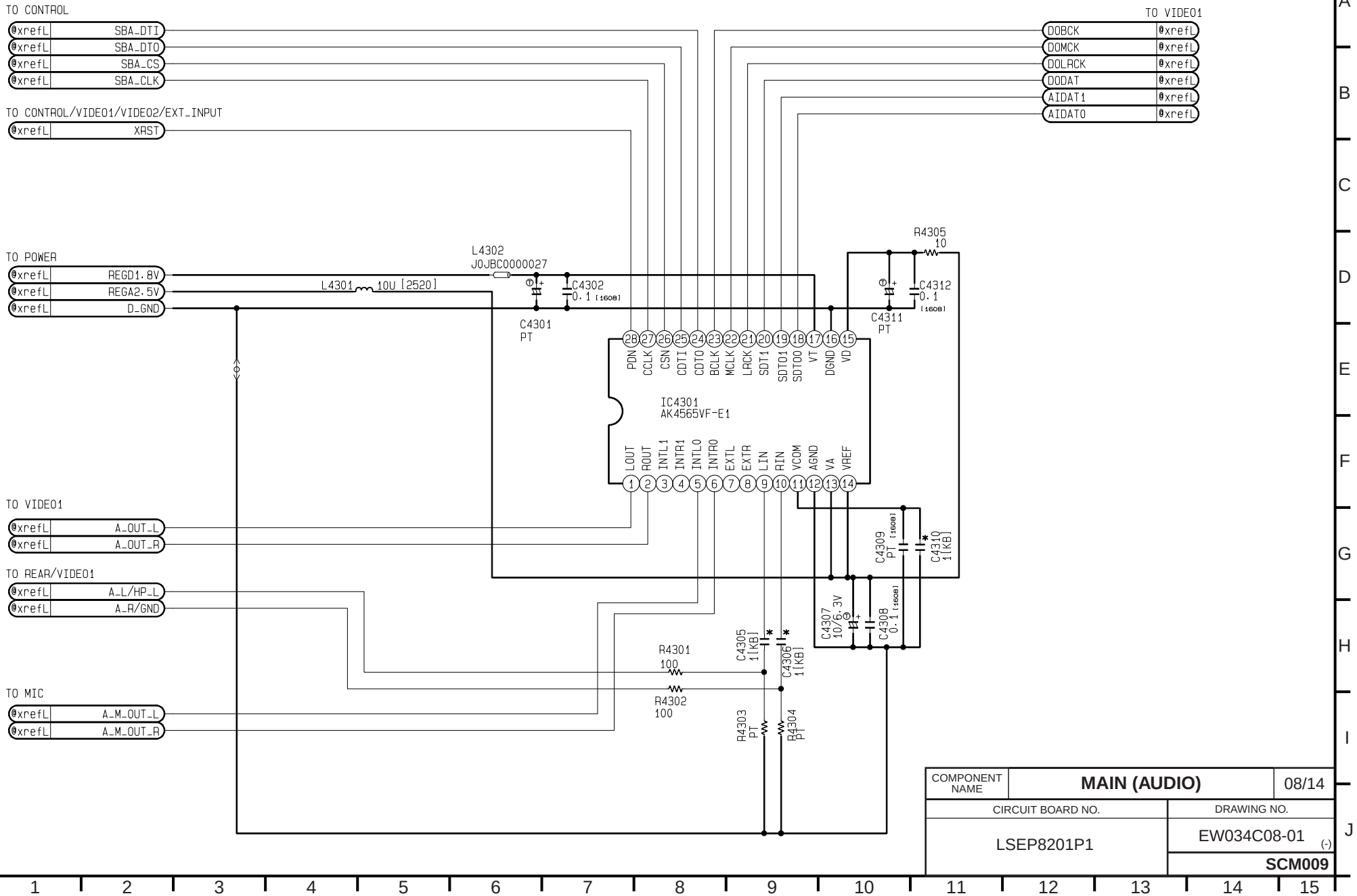
COMPONENT NAME	MAIN (VIDEO 2)	05/14
CIRCUIT BOARD NO.		DRAWING NO.
LSEP8201P1		EW034C05-01 (-)
		SCM006



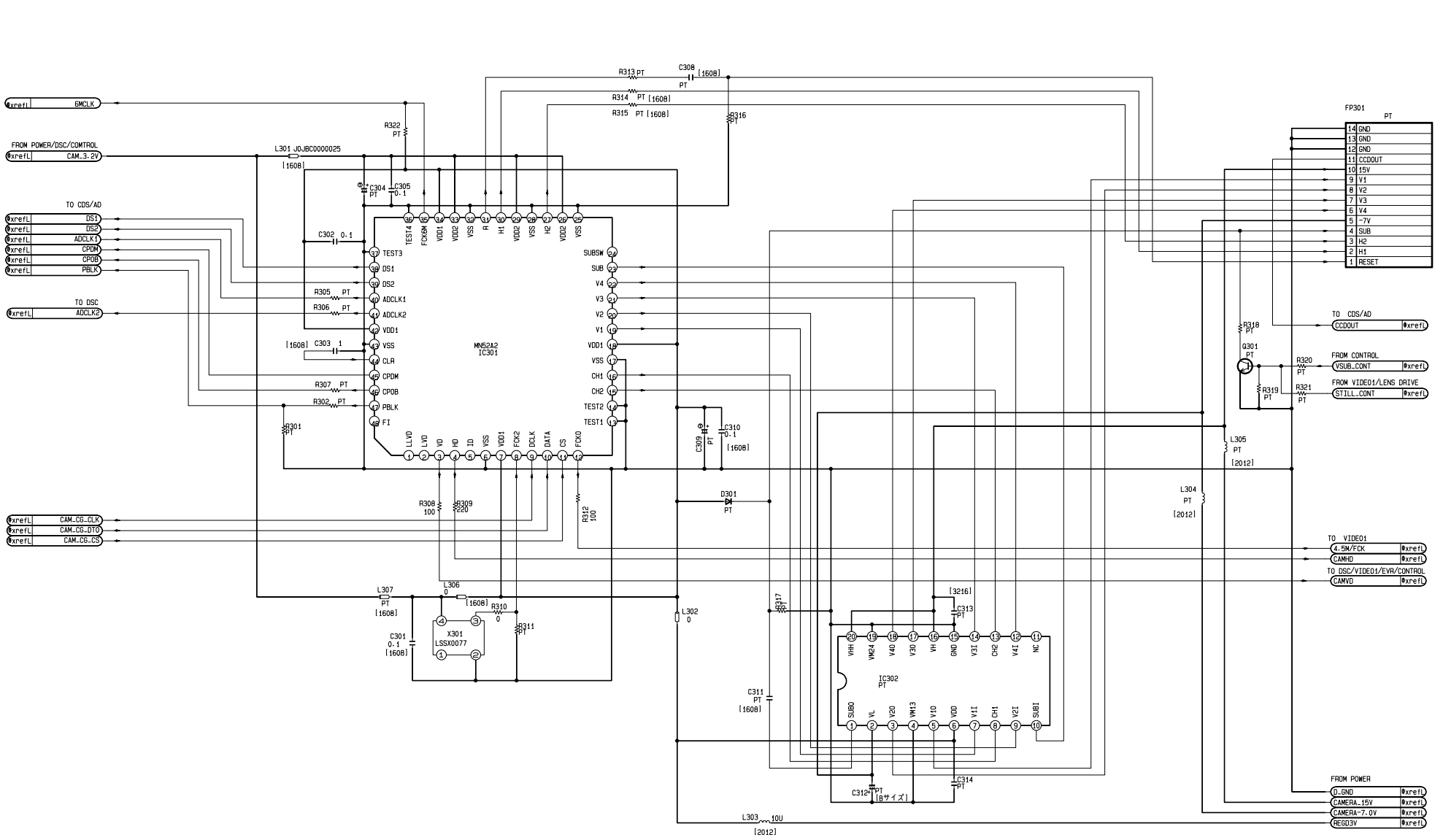
COMPONENT NAME	**MAIN (HEAD AMP)**	06/14
CIRCUIT BOARD NO.		DRAWING NO.
LSEP8201P1		EW034C06-01 (-)
		SCM007



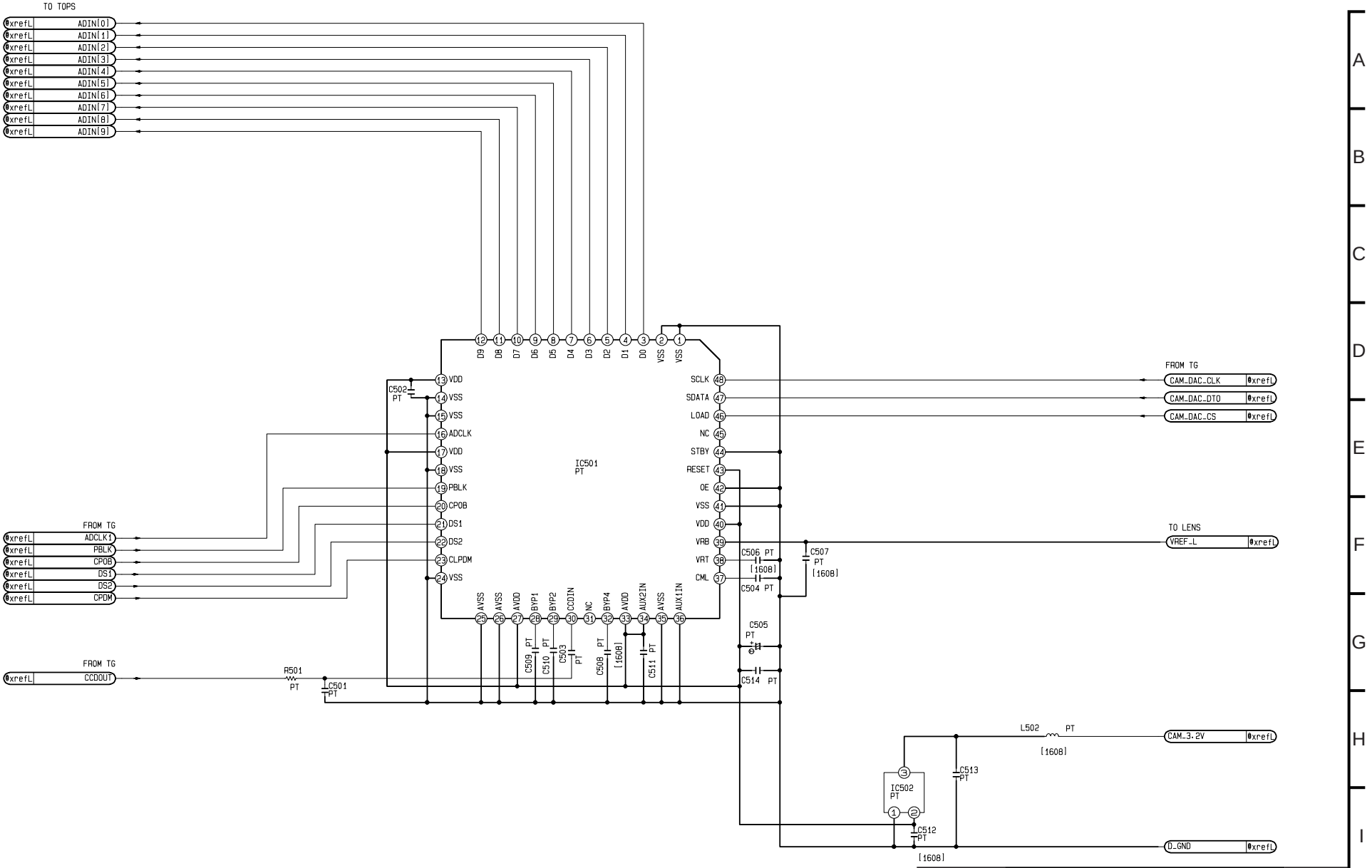
COMPONENT NAME	**MAIN (EX INPUT)**	07/14
CIRCUIT BOARD NO.		DRAWING NO.
LSEP8201P1		EW034C07-01 (-)
		SCM008



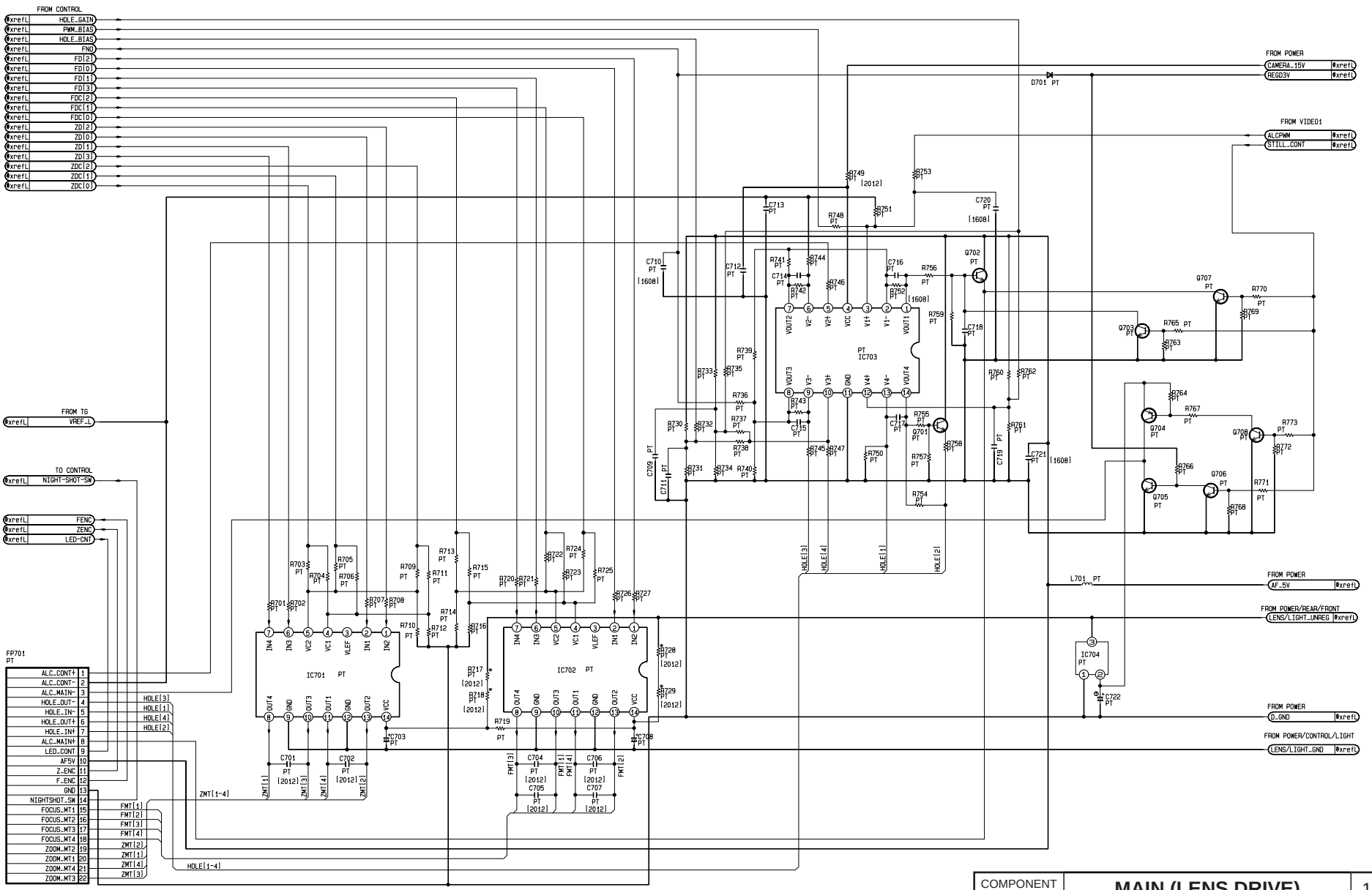
COMPONENT NAME	**MAIN (AUDIO)**	08/14
CIRCUIT BOARD NO.	DRAWING NO.	
LSEP8201P1	EW034C08-01 (-)	
	SCM009	



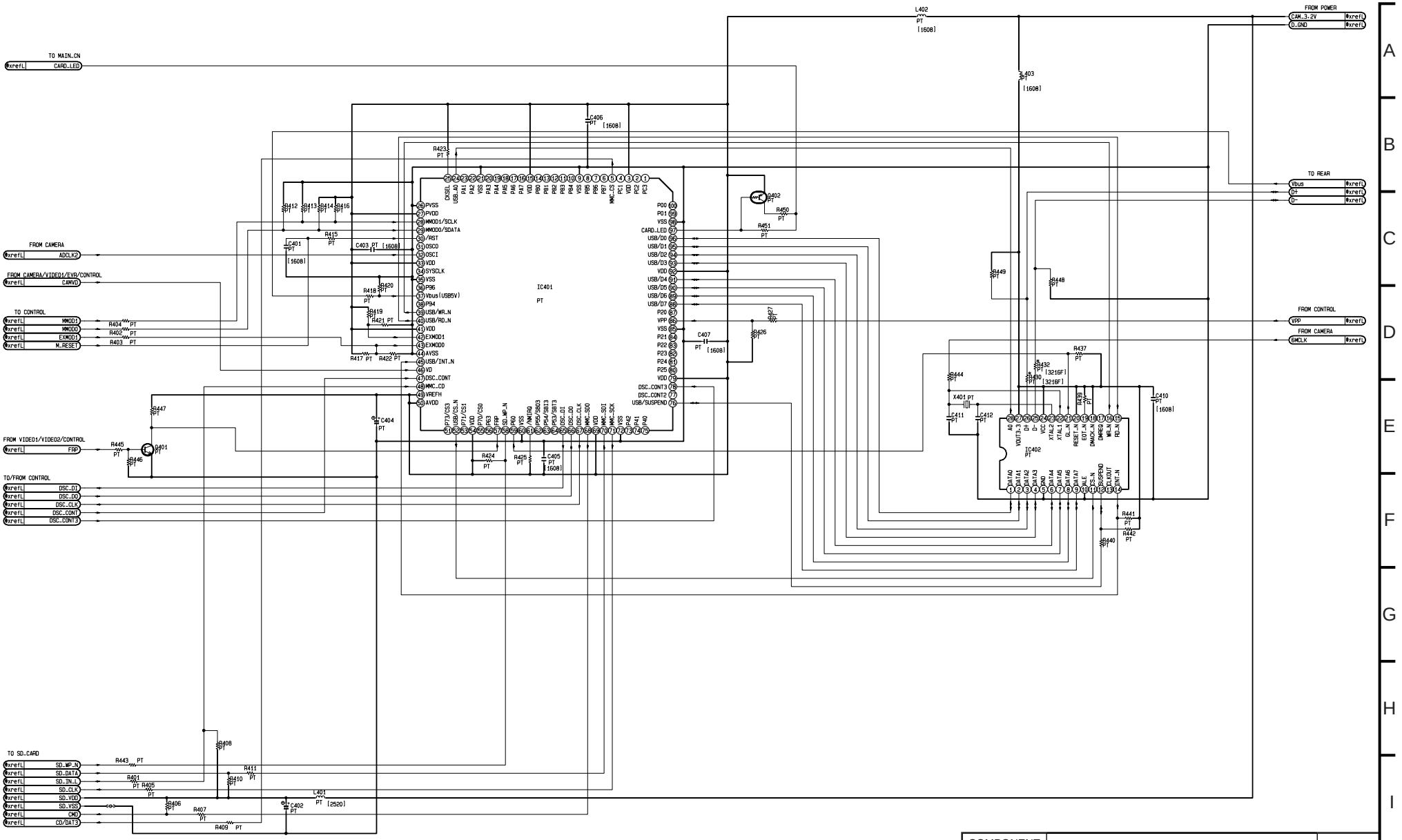
COMPONENT NAME	MAIN (TG)	09/14
CIRCUIT BOARD NO.		DRAWING NO.
LSEP8201P1		EW034C09-01 (-)
		SCM010

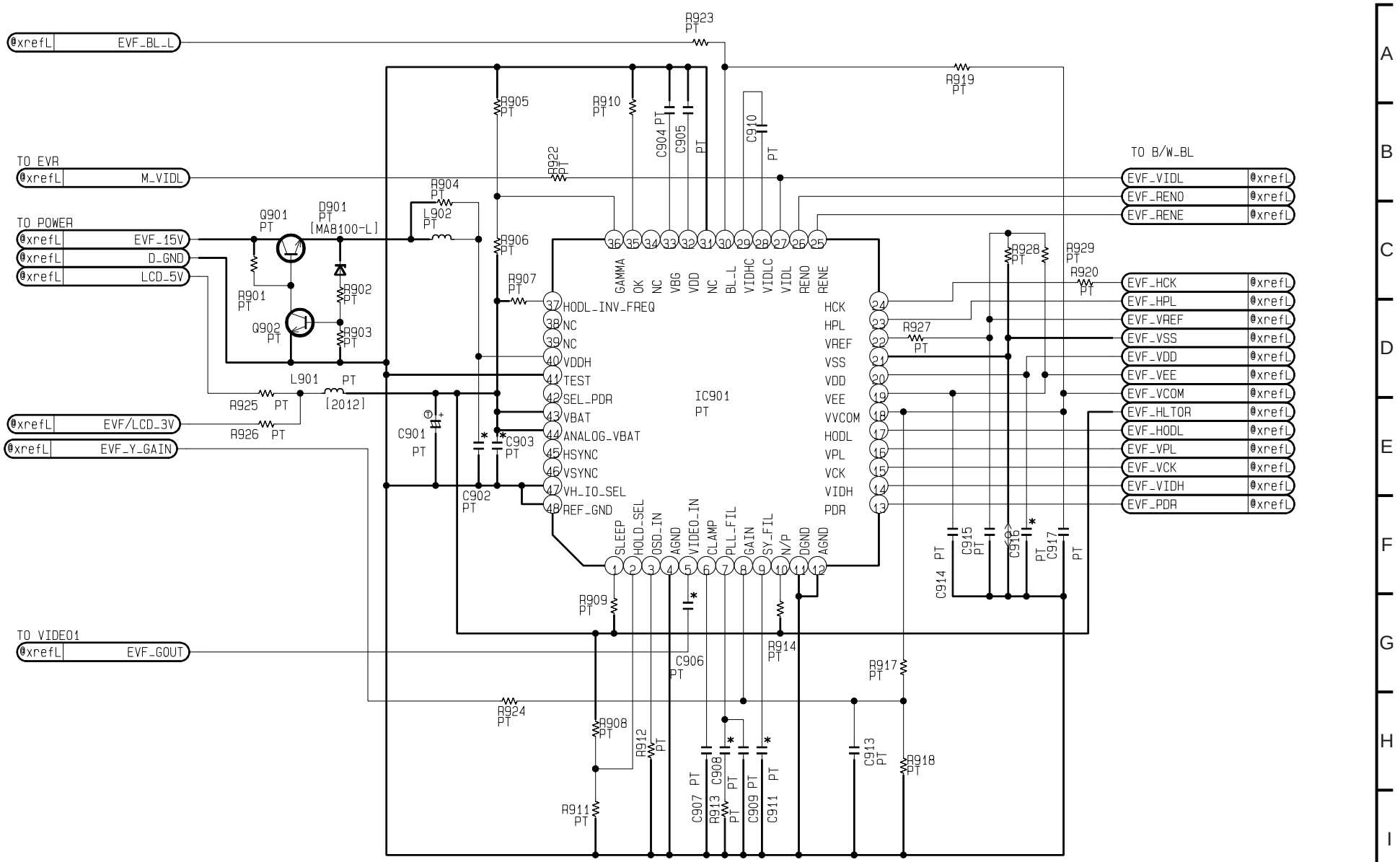


COMPONENT NAME	MAIN (CDS/AD)	10/14
CIRCUIT BOARD NO.		DRAWING NO.
LSEP8201P1		EW034C10-01 (-)
		SCM011

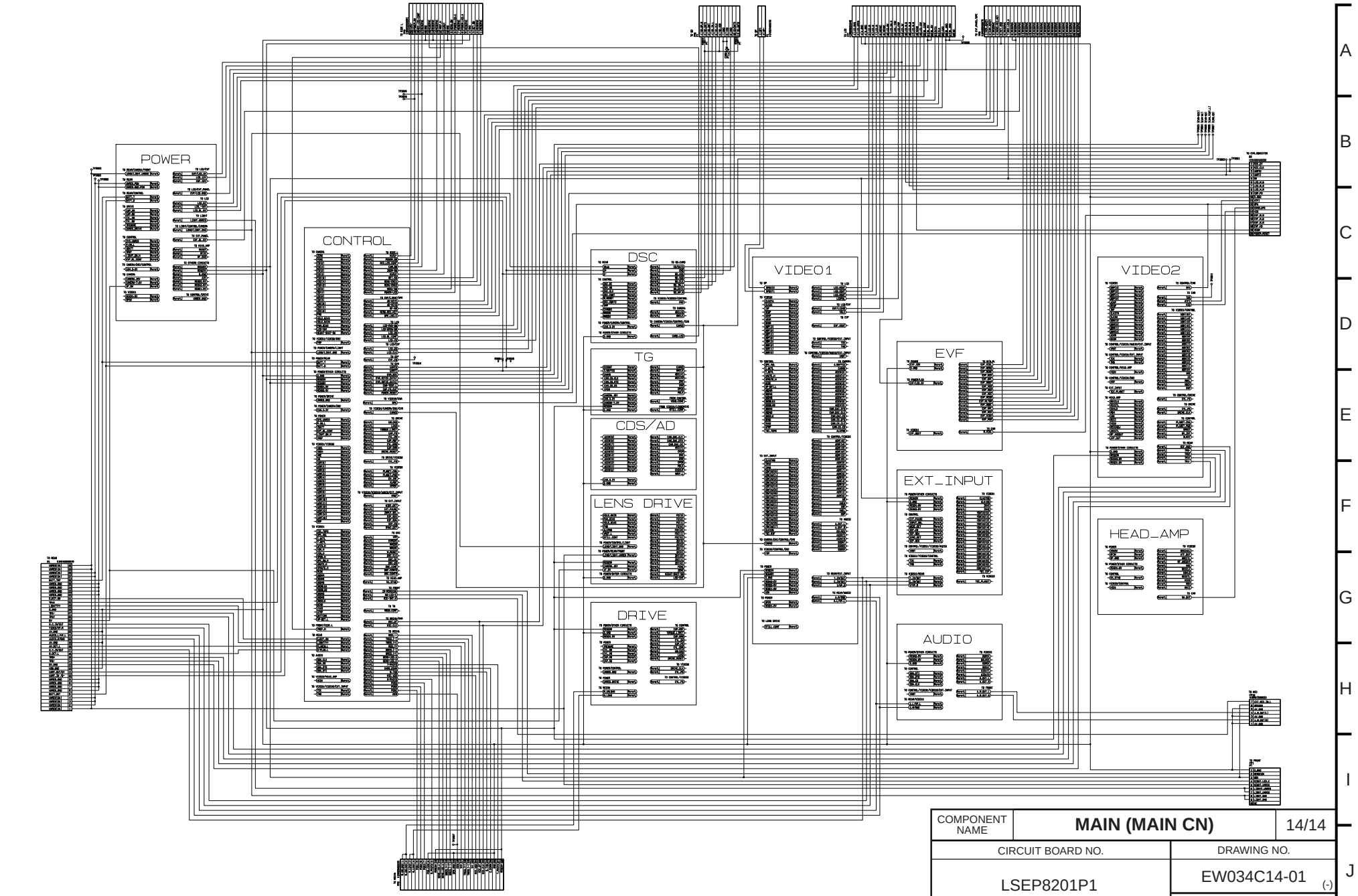


COMPONENT NAME	**MAIN (LENS DRIVE)**	11/14
CIRCUIT BOARD NO.		DRAWING NO.
LSEP8201P1		EW034C11-01 (-)
		SCM012

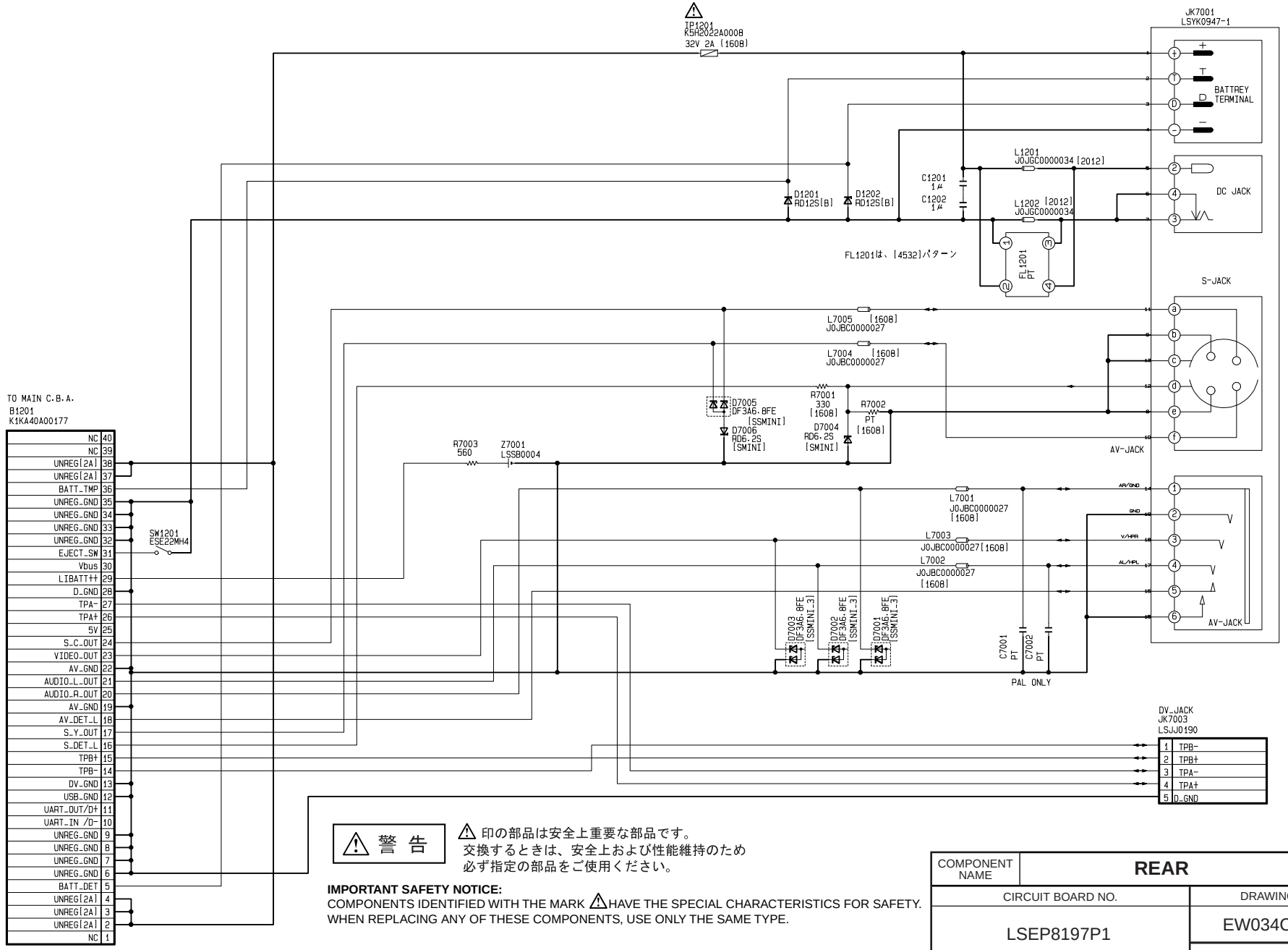

TO MAIN_CN
CARD_LED
FROM CAMERA
ADCLK2
FROM CAMERA/VIDEO1/EVR/CONTROL
CAMVD
TO CONTROL
MMOD1
MMOD0
EXMOD1
M_RESET
FROM VIDEO1/VIDEO2/CONTROL
FRP
TO/FROM CONTROL
DSC_DI
DSC_DO
DSC_CLK
DSC_CONT
DSC_CONT3
TO SD_CARD
SD_WP_N
SD_DATA
SD_IN_L
SD_CLK
SD_VDD
SD_VSS
CMD
CD/DAT3
IC401
PT
IC402
PT
X401 PT
L402
[1608]
L403
PT
[1608]
L401
PT
[2520]
FROM POWER
CAM_3.2V
D_GND
TO REAR
Vbus
D+
D-
FROM CONTROL
VPP
FROM CAMERA
SMCLK
COMPONENT NAME
MAIN (DSC)
12/14
CIRCUIT BOARD NO.
LSEP8201P1
DRAWING NO.
EW034C12-01 (-)
SCM013



COMPONENT NAME	MAIN (B/W EVF)	13/14
CIRCUIT BOARD NO.		DRAWING NO.
LSEP8201P1		EW034C13-01 (-)
		SCM014



COMPONENT NAME	MAIN (MAIN CN)	14/14
CIRCUIT BOARD NO.		DRAWING NO.
LSEP8201P1		EW034C14-01 (-)
		SCM015



⚠ 警 告

⚠ 印の部品は安全上重要な部品です。
交換するときは、安全上および性能維持のため
必ず指定の部品をご使用ください。

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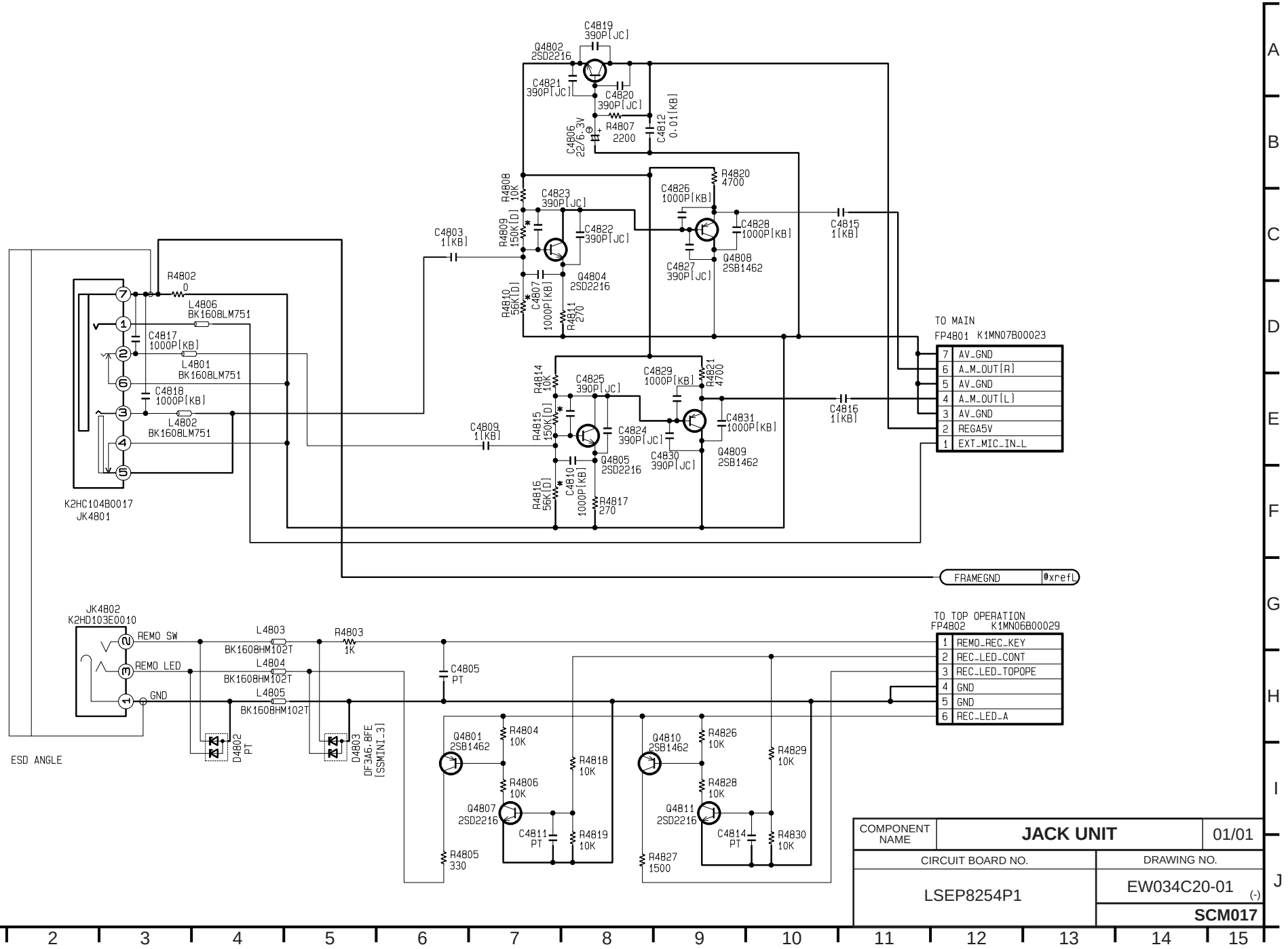
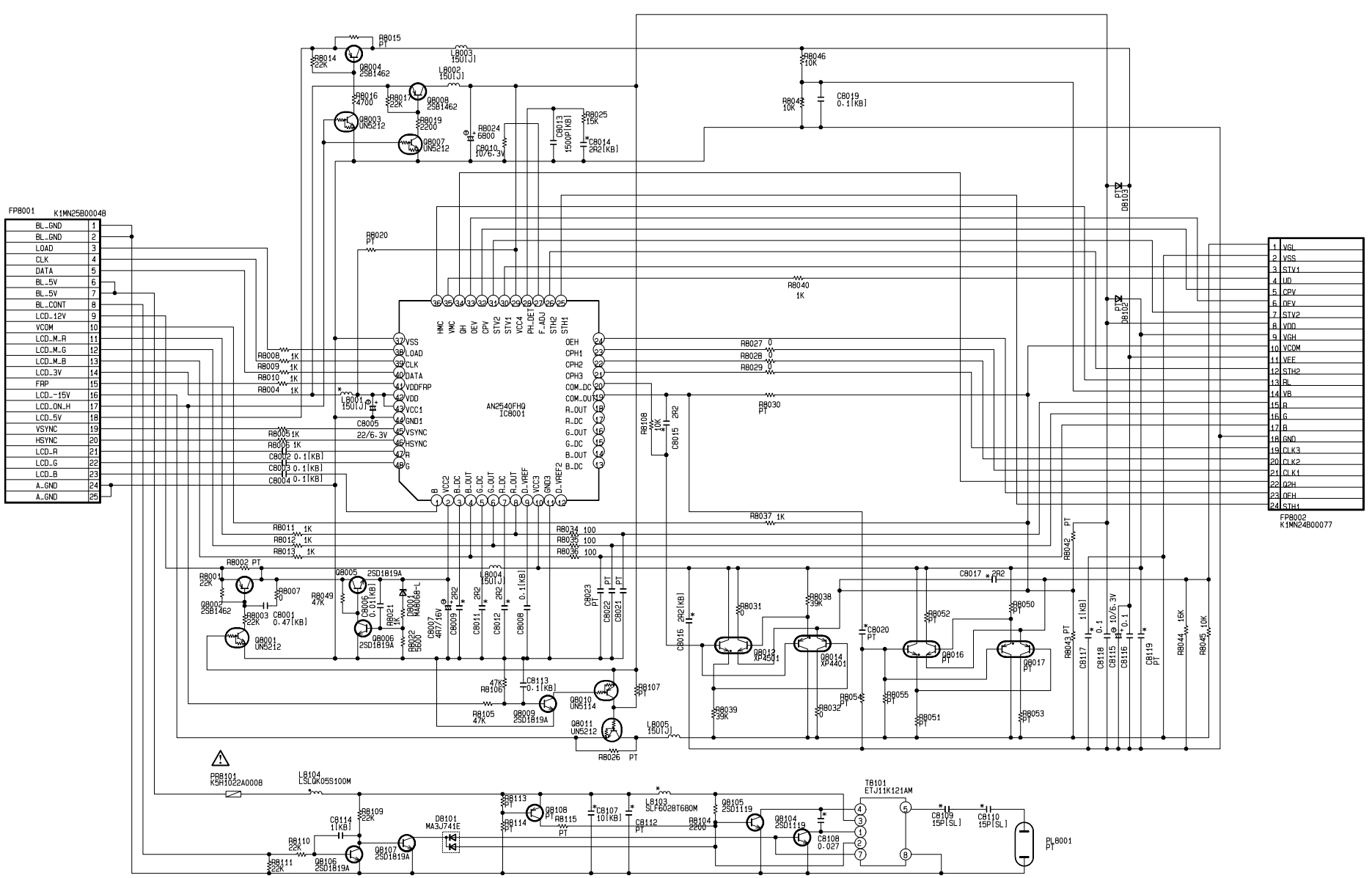
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

COMPONENT NAME	REAR	01/01
CIRCUIT BOARD NO.		DRAWING NO.
LSEP8197P1		EW034C16-01 (-)
		SCM016



COMPONENT NAME	**JACK UNIT**	01/01
CIRCUIT BOARD NO.		DRAWING NO.
LSEP8254P1		EW034C20-01 (-)
		SCM017

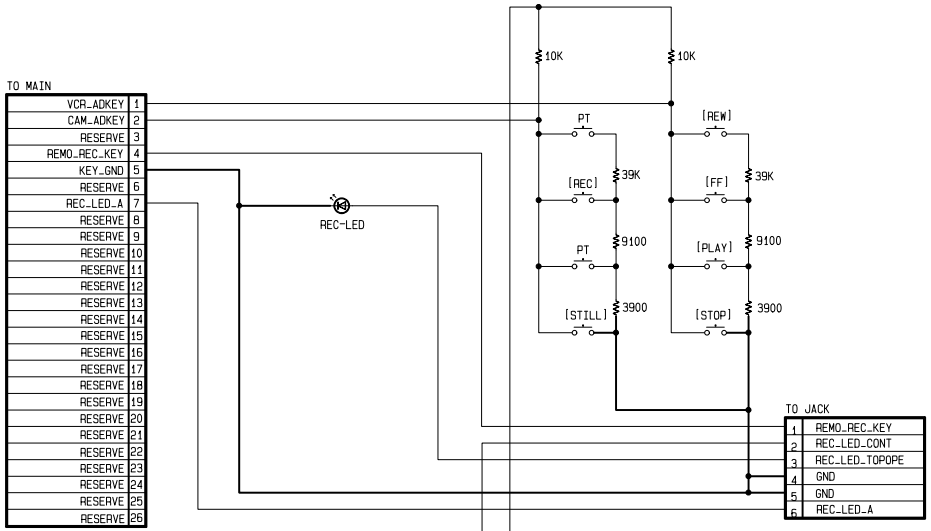


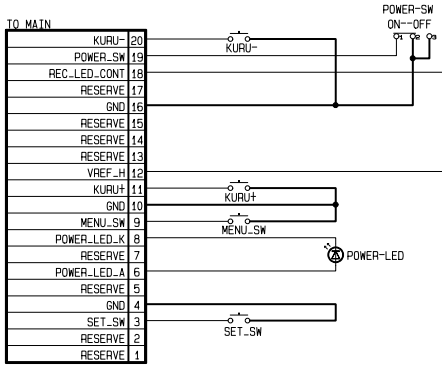
⚠ 警 告

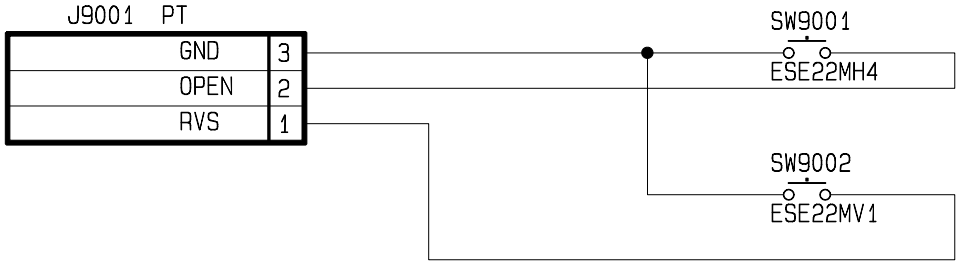
⚠ 印の部品は安全上重要な部品です。
交換するときは、安全上および性能維持のため
必ず指定の部品をご使用ください。

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

COMPONENT NAME	**LCD DRIVE (3.5inch)**	01/01
CIRCUIT BOARD NO.		DRAWING NO.
LSEP8178B1		EW034C18-01 (-)
		SCM018







COMPONENT NAME	Top Operation	01/01
CIRCUIT BOARD NO.	DRAWING NO.	
LSEP***	***** (-)	
	SCM019	

COMPONENT NAME	LCD SW C.B.A	01/01
CIRCUIT BOARD NO.	DRAWING NO.	
LSEP8182A1	EW034C19-01 (-)	
	SCM019	

SECTION 6

CIRCUIT BOARD DIAGRAMS

NOTE:
BE SURE TO MAKE YOUR ORDERS OF REPLACEMENT PARTS ACCORDING TO PARTS LIST, SECTION 7

CAUTION

THE ▭ MARK INDICATES THE PRIMARY CIRCUIT TO DISTINGUISH THE PRIMARY FROM THE SECONDARY CIRCUIT.
PAY ATTENTION NOT TO RECEIVE AN ELECTRIC SHOCK DURING REPAIR AND SERVICE OF THE PRODUCTS.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

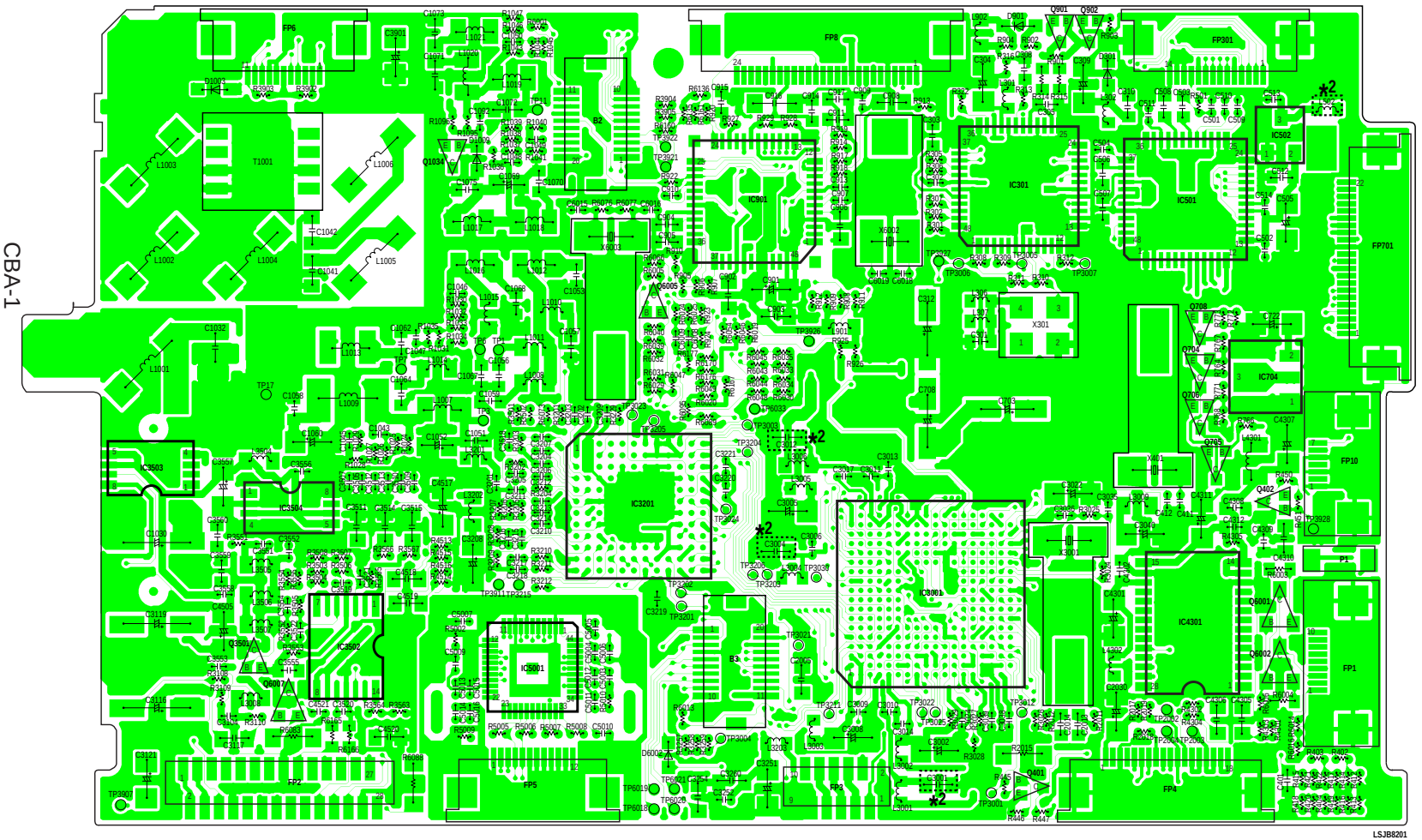
CONTENTS

MAIN C.B.A. (LSEP8201P1).....CBA-1
REAR C.B.A. (LSEP8197P1).....CBA-3
JACK C.B.A. (LSEP8254P1).....CBA-4
LCD C.B.A. (LSEP8178B1).....CBA-5

MAIN C.B.A. (LSEP8201P1)

(COMPONENT SIDE)

CBA-1

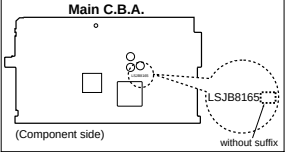


✱2

D1101, C3001, C3004, C3012, C3107, C3110, C3115, L402,L403, and L502 replacement note:
D1101, C3001, C3004, C3012, C3107, C3110, C3115, L402, L403, and L502 on Main C.B.A. have been changed on a running change basis. When servicing these parts, be sure to confirm whether the product is an early one or a later one by checking the part number suffix on Main C.B.A. as shown.
In early products: LSJB8165 (without suffix)
In later products: LSJB8165-1 etc. (with suffix)

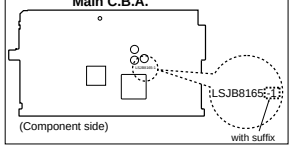
Early Products

Main C.B.A.



Later Products

Main C.B.A.

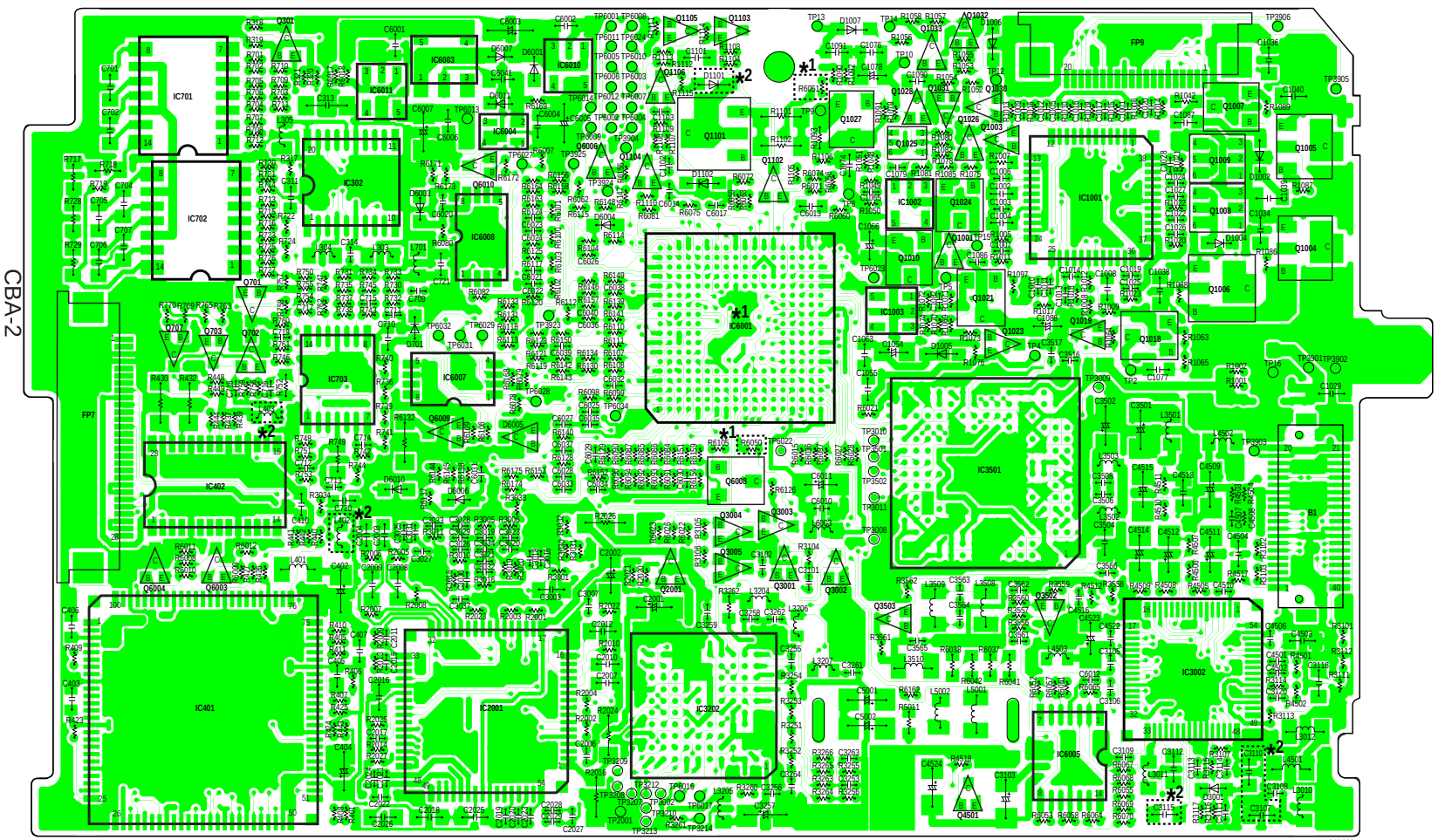


For C3001, C3004, C3012, C3107, C3110, C3115, L402, L403, and L502, the part number of the replacement parts are different for early products and later products as shown. When servicing these parts, be sure to replace with the proper parts.
Please note that D1101 has been deleted in later products.

Ref. No.	Part No.		Models
	Early Products	Later Products	
D1101	RD12S-T1B	----------	PV-DV102-K, PV-DV202-K, PV-DV402-K
C3001	VCUSQAV105ZF	ECJ2VF1C105Z	PV-DV102-K, PV-DV202-K, PV-DV402-K
C3004	VCUSQAV105ZF	ECJ2VF1C105Z	PV-DV102-K, PV-DV202-K, PV-DV402-K
C3012	VCUSQAV105ZF	ECJ2VF1C105Z	PV-DV102-K, PV-DV202-K, PV-DV402-K
C3107	VCUSQAV105ZF	ECJ2VF1C105Z	PV-DV102-K, PV-DV202-K, PV-DV402-K
C3110	VCUSQAV105ZF	ECJ2VF1C105Z	PV-DV102-K, PV-DV202-K, PV-DV402-K
C3115	VCUSQAV105ZF	ECJ2VF1C105Z	PV-DV102-K, PV-DV202-K, PV-DV402-K
L402	G1C100M00010	J0JBC0000025	PV-DV202-K, PV-DV402-K
L403	G1C100M00010	J0JBC0000025	PV-DV202-K, PV-DV402-K
L502	G1C100M00010	J0JBC0000025	PV-DV102-K, PV-DV202-K, PV-DV402-K

MAIN C.B.A. (LSEP8201P1)

(FOIL SIDE)



✱1

IC6001 REPLACEMENT NOTE

Two types of IC6001 (M32121FCAWG or M32121MCA123) are used on a running change basis, however IC6001 (M32121MCA123) is supplied only as a replacement part. When replacing IC6001, as in the following cases, it is necessary to replace the resistor at the same time or IC6001 may have a short life.

- When replacing IC6001 (M32121FCAWG) with IC6001 (M32121MCA123), be sure to move resistor (Ref. No. R6051) to the R6050 location.

Types of IC6001

M32121FCAWG	Head Mark — M32121FCAWG — Part number
M32121MCA123	Head Mark — M32121MCA -123WG — Part number

✱2

D1101, C3001, C3004, C3012, C3107, C3110, C3115, L402,L403, and L502 replacement note:

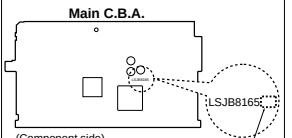
D1101, C3001, C3004, C3012, C3107, C3110, C3115, L402, L403, and L502 on Main C.B.A. have been changed on a running change basis. When servicing these parts, be sure to confirm whether the product is an early one or a later one by checking the part number suffix on Main C.B.A. as shown.

In early products: LSJB8165 (without suffix)

In later products: LSJB8165-1 etc. (with suffix)

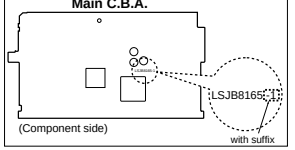
Early Products

Main C.B.A.



Later Products

Main C.B.A.



For C3001, C3004, C3012, C3107, C3110, C3115, L402, L403, and L502, the part number of the replacement parts are different for early products and later products as shown. When servicing these parts, be sure to replace with the proper parts.

Please note that D1101 has been deleted in later products.

Ref. No.	Part No.		Models
	Early Products	Later Products	
D1101	RD12S-T1B	----------	PV-DV102-K, PV-DV202-K, PV-DV402-K
C3001	VCUSQAV105ZF	ECJ2VF1C105Z	PV-DV102-K, PV-DV202-K, PV-DV402-K
C3004	VCUSQAV105ZF	ECJ2VF1C105Z	PV-DV102-K, PV-DV202-K, PV-DV402-K
C3012	VCUSQAV105ZF	ECJ2VF1C105Z	PV-DV102-K, PV-DV202-K, PV-DV402-K
C3107	VCUSQAV105ZF	ECJ2VF1C105Z	PV-DV102-K, PV-DV202-K, PV-DV402-K
C3110	VCUSQAV105ZF	ECJ2VF1C105Z	PV-DV102-K, PV-DV202-K, PV-DV402-K
C3115	VCUSQAV105ZF	ECJ2VF1C105Z	PV-DV102-K, PV-DV202-K, PV-DV402-K
L402	G1C100M00010	J0JBC0000025	PV-DV202-K, PV-DV402-K
L403	G1C100M00010	J0JBC0000025	PV-DV202-K, PV-DV402-K
L502	G1C100M00010	J0JBC0000025	PV-DV102-K, PV-DV202-K, PV-DV402-K

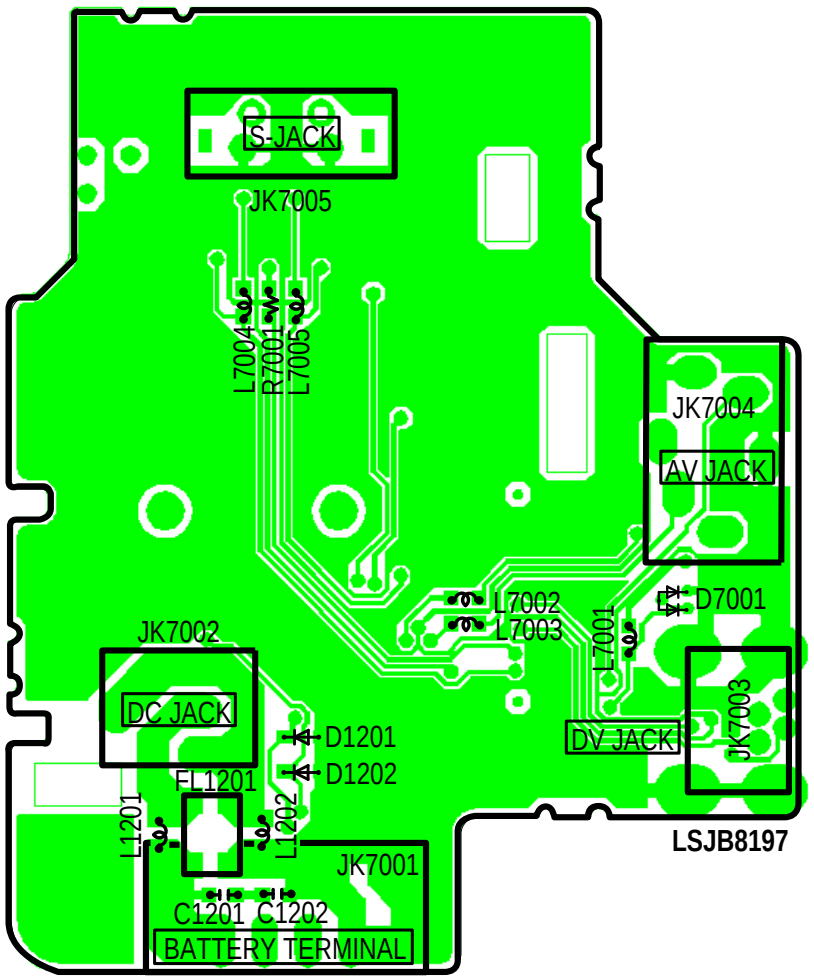
REAR C.B.A. (LSEP8197P1)

⚠ 警 告

⚠ 印の部品は安全上重要な部品です。
交換するときは、安全上および性能維持のため
必ず指定の部品をご使用ください。

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

(COMPONENT SIDE)



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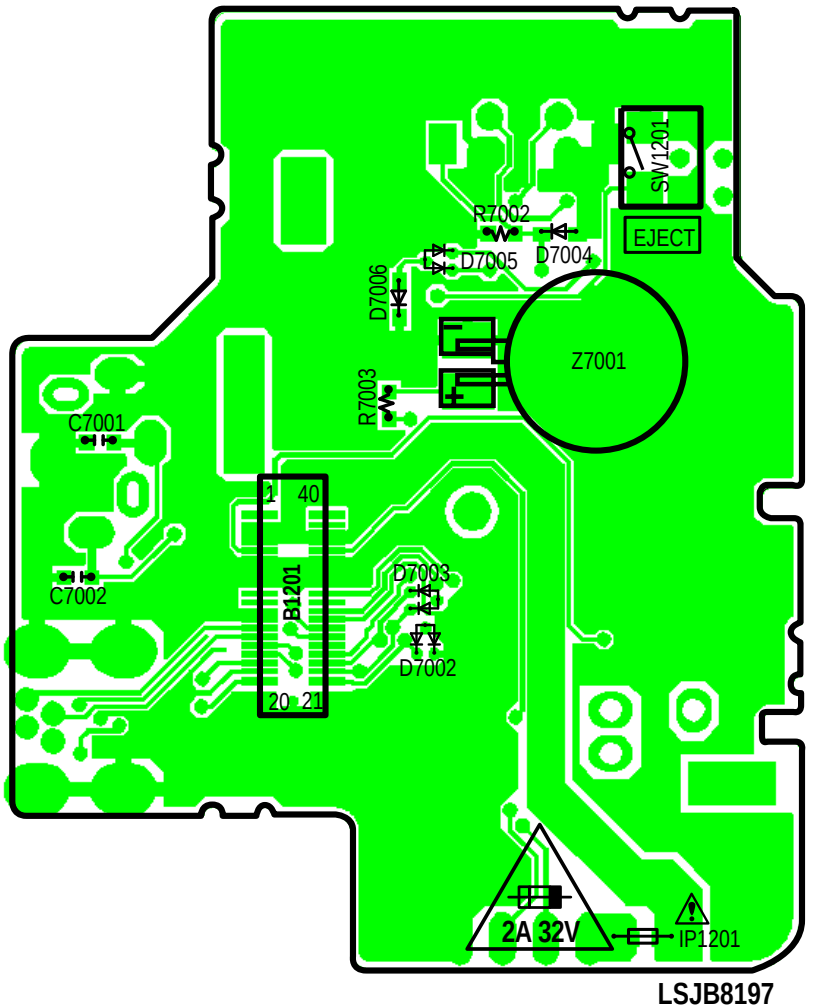


(DUAL PATTERNS)

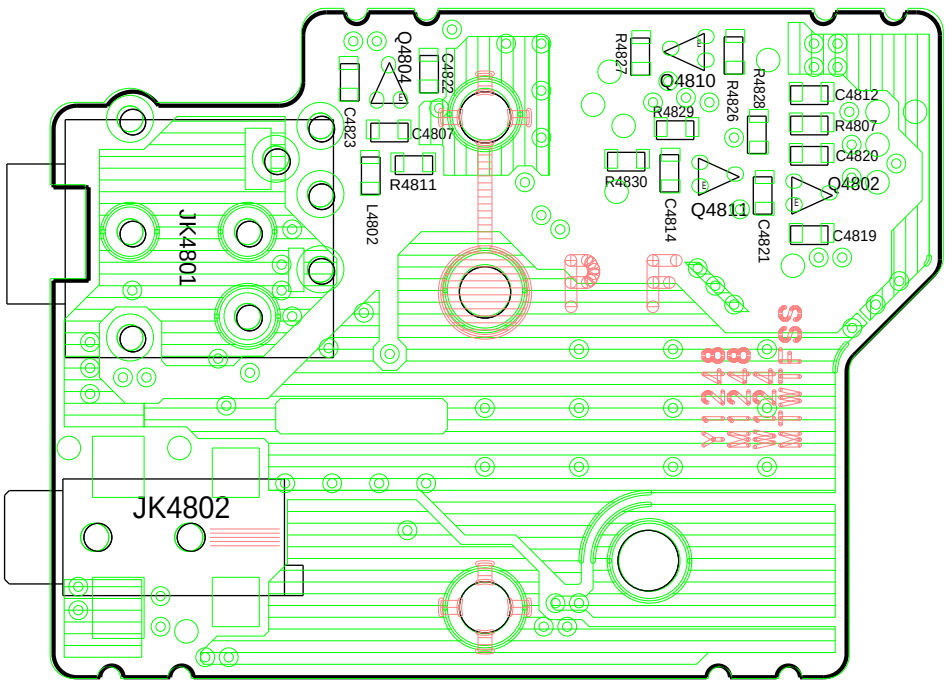
(DUAL PATTERNS)

CBA-3

JACK C.B.A. (LSEP8254P1)

CBA-4

(COMPONENT SIDE)



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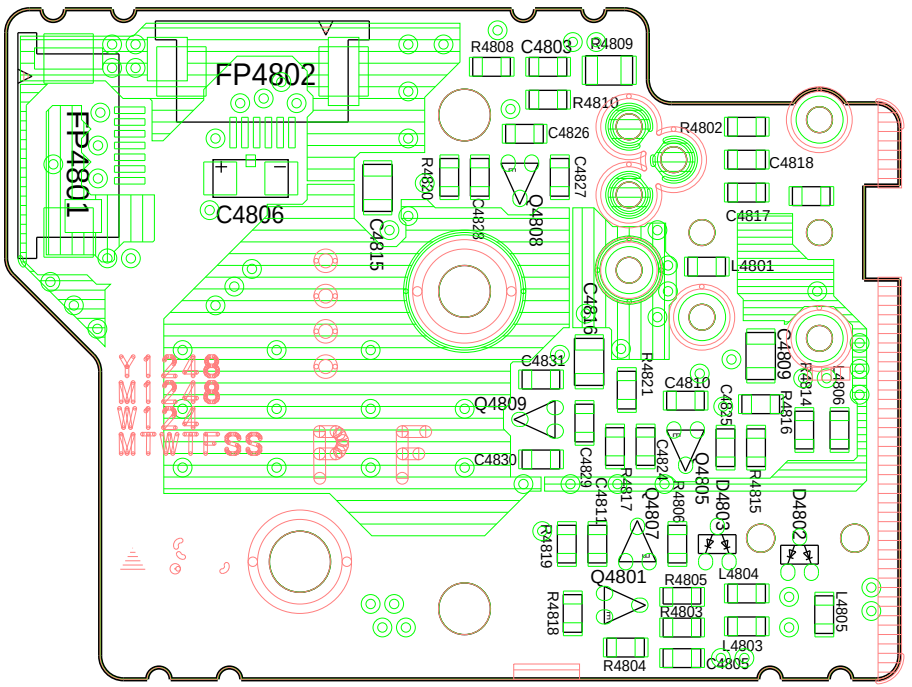


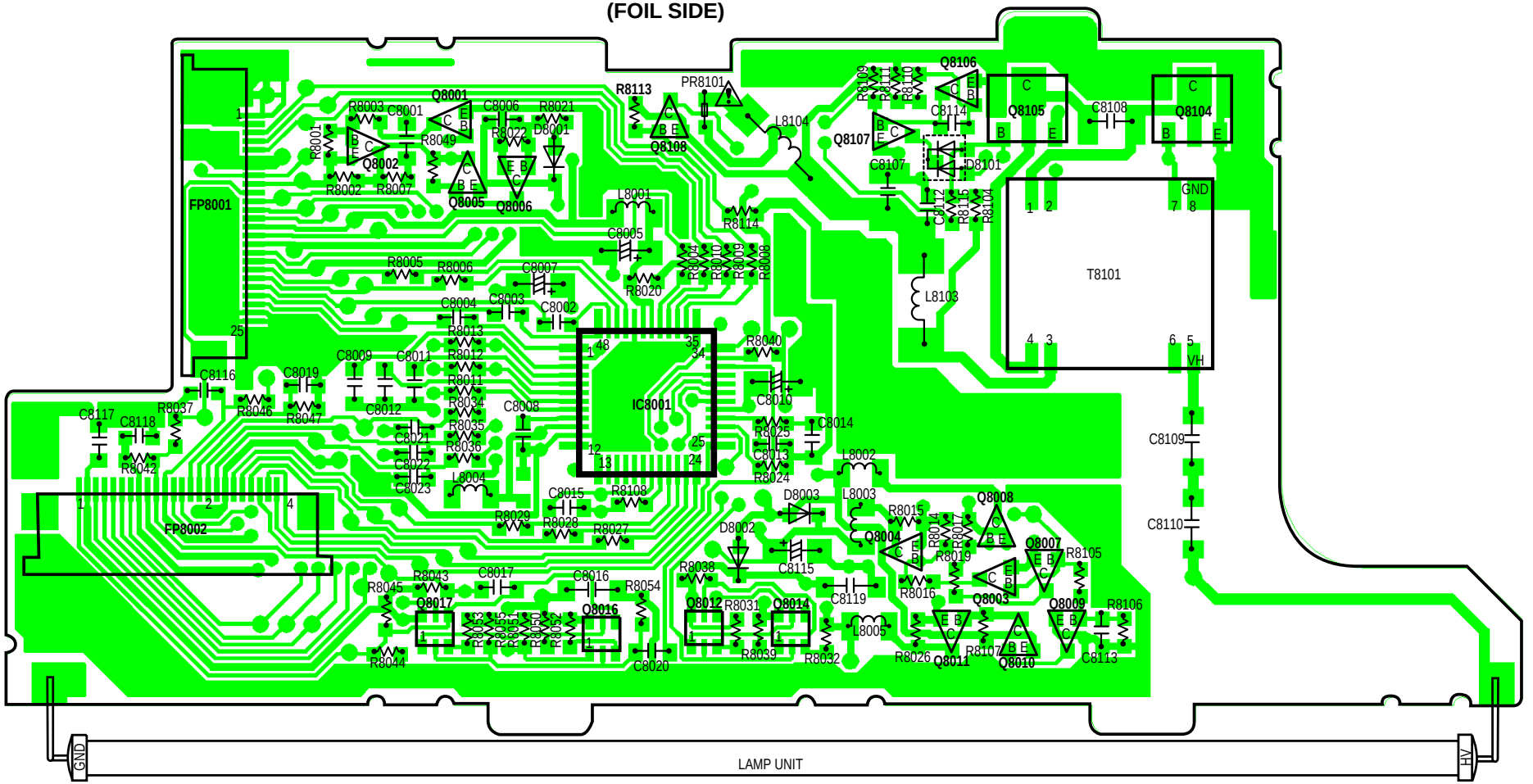
LCD C.B.A. (LSEP8178B1)

⚠ 警 告

⚠ 印の部品は安全上重要な部品です。
交換するときは、安全上および性能維持のため
必ず指定の部品をご使用ください。

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

(FOIL SIDE)



(DUAL PATTERNS)

LSJB8178

LCD C.B.A. LSEP8178B1
AG-DV1DCE

SECTION 7

EXPLODED VIEWS
&
REPLACEMENT PARTS LIST

Note:

1. *Be sure to make your orders of replacement parts according to this list.
2. Unless otherwise specified, all resistors are in OHMS, K=1,000 OHMS, all capacitors are in MICROFARADS (μF), P=μμF.
3. The P.C. Board unit marked with "■" shown below the main assembled parts.
4. The parts marked with Ⓔ on the exploded view show the electric parts.
5. IMPORTANT SAFETY NOTICE
   Components identified with the mark ⚠ have the special characteristics for safety. When replacing any of these components, use only the same type.
6. The marking (RTL) indicates the retention time is limited for this item.
   After the discontinuation of this assembly in production, it will no longer be available.
7. "M" in Remark column indicates needed in the periodical maintenance.

CONTENTS

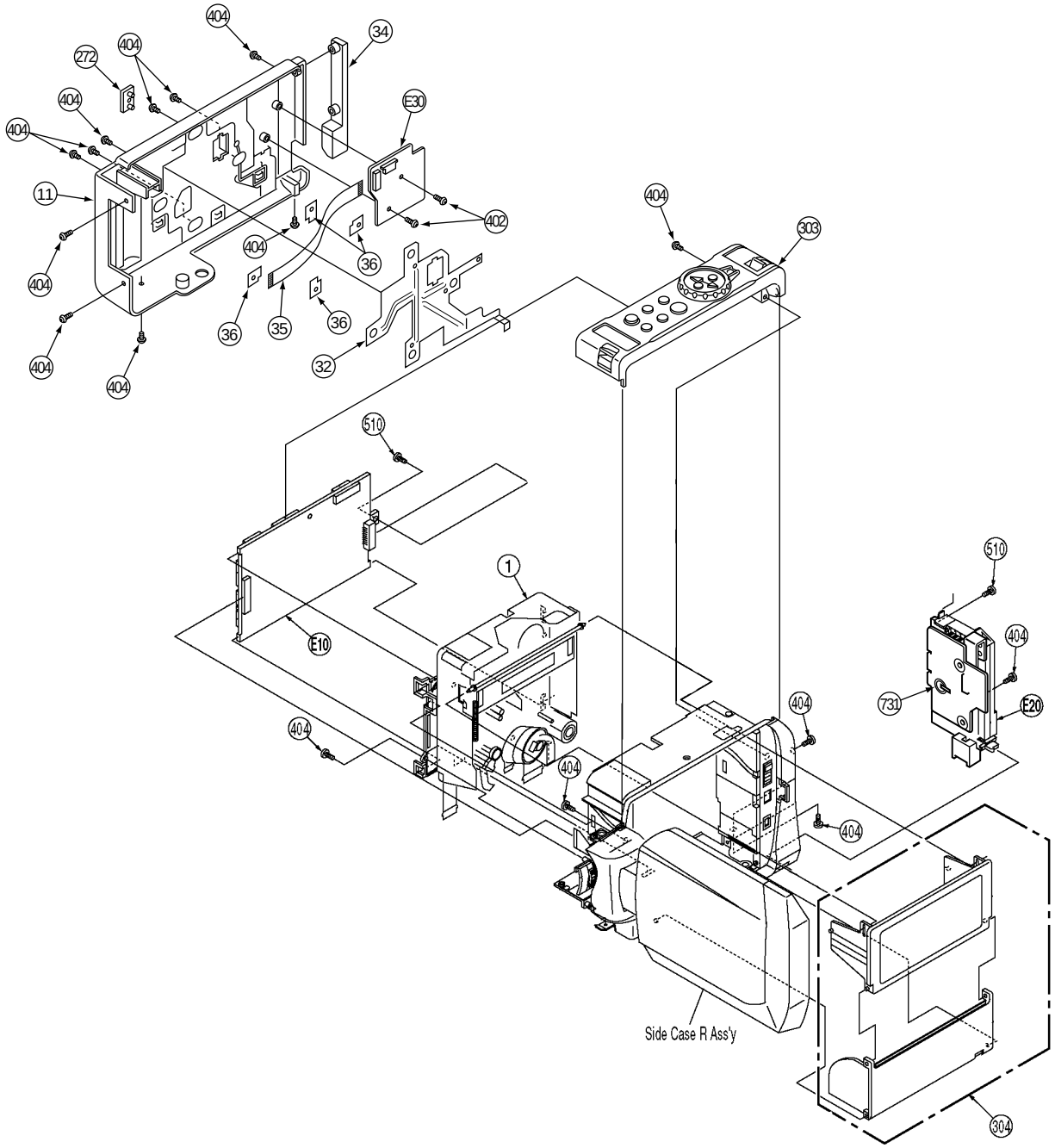
SERVICING FIXTURES & TOOLS PRT-1
MAIN PARTS ASSEMBLY PRT-2
SIDE CASE R AND LCD ASSEMBLY PRT-3
MECHANISM ASSEMBLY PRT-4
PACKING PARTS ASSEMBLY PRT-5
ELECTRICAL REPLACEMENT PARTS LIST PRT-7

SERVICING FIXTURES & TOOLS

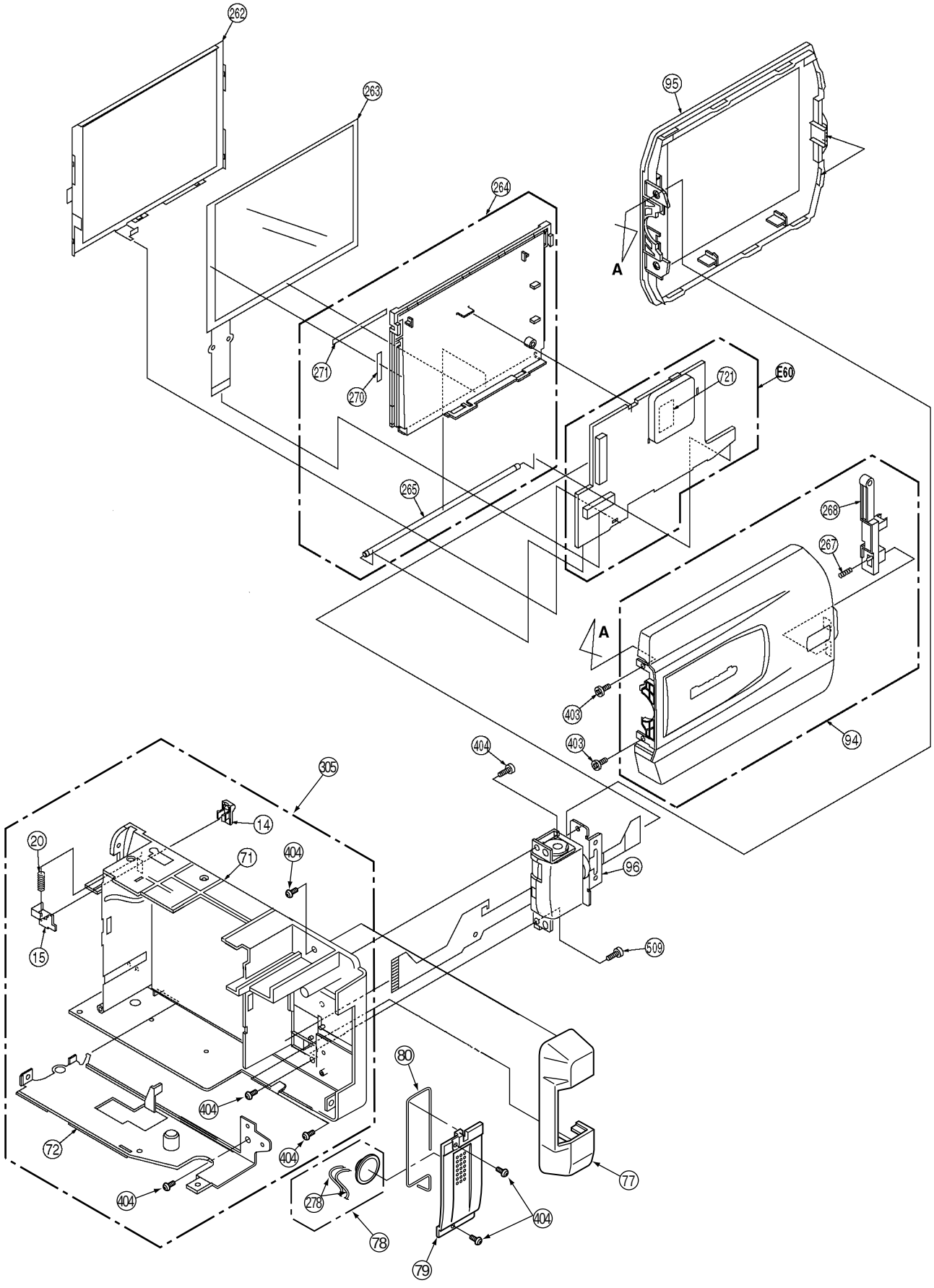
Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
	VFM3110EDS	DV ALIGNMENT TAPE (COLOR BAR)	1	
	LSVQ0041	TAPE PATH ALIGNMENT TAPE	1	
	LSUA0017	EXTENSION CABLE 18P	1	
	LSUA0016	EXTENSION CABLE 10P	1	
	VUVS0015	EXTENSION CABLE 28P	1	
	LSUQ0002	GREASE	1	
	VFKS0081	GREASE	1	
	LSVQ0021	POST HEIGHT ADJ. FIXTURE	1	
	LSUP0016	CAMERA CONNECTING CABLE	1	
	LSUP0007	INTERFACE BOARD	1	FOR ELECTRICAL ADJ.
	VFK1451	DVC HEAD CLEANING TAPE	1	
	VFK1820A	EVR SOFTWARE	1	
	LUVS0007	EXTENSION CABLE 12P	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks

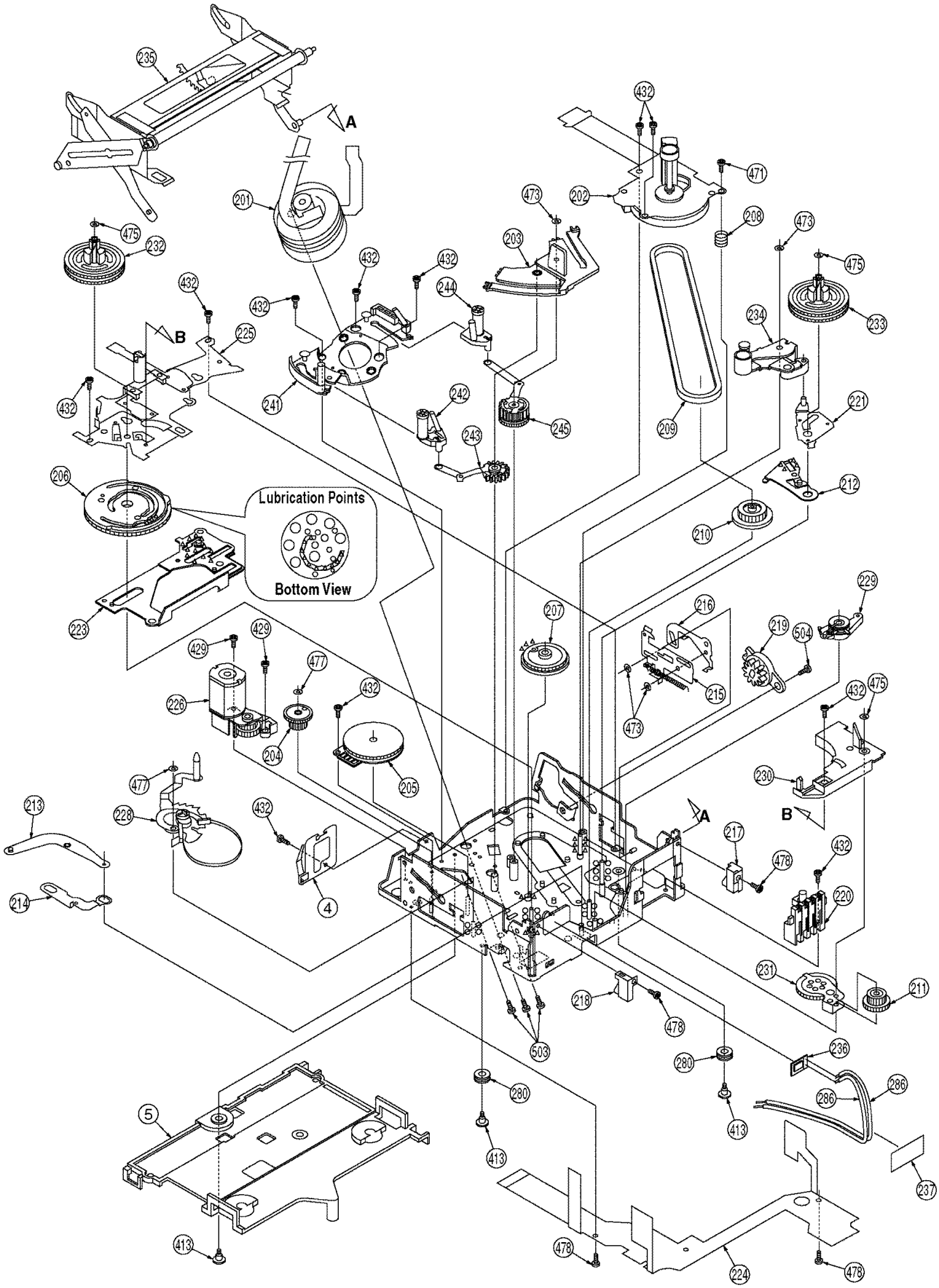
MAIN PARTS ASSEMBLY



SIDE CASE R AND LCD ASSEMBLY

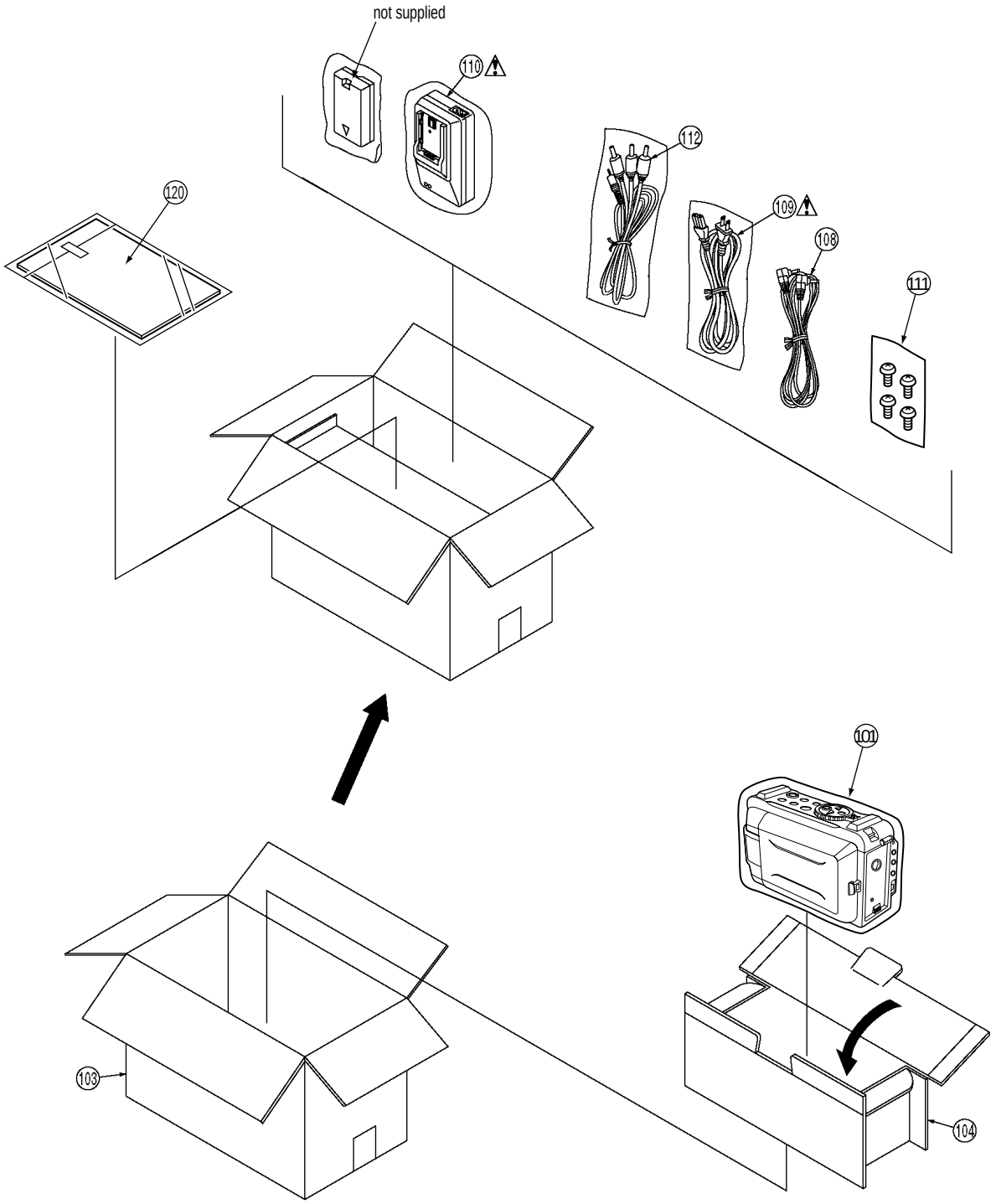


MECHANISM ASSEMBLY



PACKING PARTS ASSEMBLY

Components identified with the mark ⚠ have the special characteristics for safety.
When replacing any of these components, use only the same type.



Components identified with the mark ⚠ have the special characterisitics for safety.
When replacing any of these components, use onlly the same type.

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
1	LSXY0432	MECHANISM CHASIS ASS'Y	1	
4	LSMA0570	GROUNDING PLATE,STEEL	1	
5	LSYK0963	MECHANISM BASE ASS'Y	1	
11	LSKM0827	SIDE CASE L	1	
14	LSGT0060	CASSETTE EJECT KNOB	1	
15	LSMD0304	CASSETTE EJECT PIECE	1	
20	LSMB0198	BATTERY EJECT SPRING	1	
32	LSMA0621	PLATE A	1	
34	LSMD0338	JACK COVER	1	
35	LSJW0036	FLEXIBLE CABLE	1	
36	LSMA0623	NUT HOLDER	4	
71	LSKM0964	SIDE CASE R, ABS RESIN	1	
72	LSMA0620	TRIPOD FRAME	1	
77	LSKM0824	FRONT COVER	1	
78	LSYK0912	SPEAKER (C)	1	
79	LSKM0821	SPEAKER HOLDER	1	
80	LSMC0119	SPEAKER ANGLE	1	
94	LSYK1185	LCD CASE A ASS'Y	1	
95	LSKM0967	LCD CASE B, ABS RESIN (C)	1	
96	LSXA0500	LCD SHAFT ASS'Y	1	
101	LSPF0085	BAG,POLYETHYLEN	1	
103	LSPG1518	PACKING CASE PAPER (C)	1	
104	LSTG1390	ACCESSORY PACKING CASE	1	
108	LSJA0288	DC CABLE W/PLUG	1	
⚠ 109	K2CT3DA00001	AC CORD W/PLUG	1	
⚠ 110	DE-811DB	ADAPTOR ASS'Y	1	
111	LSYC0240	SCREW ASS'Y	1	
112	LSJA0280	AUDIO/VIDEO CABLE W/PLUG	1	
⚠ 120	LSQT0729A	INSTRUCTION BOOK	1	
201	LSEG0083	CYLINDER UNIT	1	(M)
202	LSEM0086	CAPSTAN ASS'Y	1	
203	LSMD0185	RAIL	1	
204	LSDG0092	REDUCTION GEAR B	1	(M)
205	LSSR0004	MODE SWITCH	1	
206	LSDG0093	CAM GEAR	1	(M)
207	LSDG0094	INTERMEDIATE GEAR	1	(M)
208	LSMB0180	CAPSTAN ADJUST SPRING	1	
209	LSDV0012	TIMING BELT	1	(M)
210	LSDG0095	DRIVE PULLEY	1	(M)
211	LSDG0096	CENTER GEAR	1	(M)
212	LSMA0364	T4 DRIVE ARM	1	
213	LSML0099	TENSION DRIVE ARM	1	
214	LSML0100	S BRAKE DRIVE LEVER	1	
215	VXLS1122	LOCK LEVER ASS'Y	1	
216	LSML0102	LOCK PICK LEVER	1	
217	LSMD0186	GUIDE PIECE R	1	
218	LSMD0187	GUIDE PIECE L	1	
219	LSXP0018	DAMPER ASS'Y	1	
220	LSSH0001	MEMORY IN CASSETTE SWITCH	1	
221	LSMA0365	PINCH DRIVE ARM	1	
223	VXLS1115	MAIN PLATE ASS'Y	1	
224	LSEK0501	MECHANISM FLEXIBLE PRINTED CIRCUIT UNIT	1	
225	LSEK0503	SENSOR FLEXIBLE PRINTED CIRCUIT UNIT	1	
226	LSEM0087	LOADING MOTOR ASS'Y	1	(M)
228	VXLS1116	TENSION ARM ASS'Y	1	(M)
229	LSXL0085	T BRAKE ASS'Y	1	(M)
230	VXDS0215	MECHANISM COVER ASS'Y	1	
231	VXLS1084	IDLER ARM ASS'Y	1	(M)
232	LSXR0002	S REEL TABLE	1	(M)
233	LSXR0003	T REEL TABLE	1	(M)
234	VXLS1123	PINCH ARM ASS'Y	1	(M)
235	VXAS4418	GARAGE ASS'Y	1	
236	LSJB8181	DEW SENSOR	1	
237	VMFW0045	SHEET,NYLON-RAYON	1	
241	LSXD0017	CYLINDER BASE ASS'Y	1	(M)
242	LSXD0021	S POST ASS'Y	1	
243	VXLS1118	S ARM ASS'Y	1	
244	LSXD0020	T POST ASS'Y	1	
245	VXLS1119	T ARM ASS'Y	1	
262	LSYK0958	LCD EARTH PLATE ASS'Y (C)	1	
263	EDTCA34QA0	LCD PANEL	1	
264	LSXY0354	LCD REFRECT FRAME ASS'Y	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
265	A4GB9F000001	LAMP	1	
267	LSMB0214	LCD LOCK KNOB SPRING	1	
268	LSGU0539	LCD LOCK KNOB	1	
270	LSMZ0321	BOTHSIDE TAPE A	1	
271	LSMZ0322	BOTHSIDE TAPE B	1	
272	LSKM0822	EVR COVER	1	
278	LSEK0450	SPEAKER CABLE W/PLUG,4.8V	1	
280	LSMG0089	DAMPER RUBBER	2	
286	LSEU03B55UU	DEW CABLE	2	
303	LSYK0946	TOP ASS'Y (C)	1	
304	LSYK0845	CASETTE COVER ASS'Y	1	
305	LSYK0951	SIDE CASE R ASS'Y	1	
402	XQN2+BJ4FXK	SCREW,STEEL	2	
403	XQN2+BF4FXK	SCREW,STEEL	2	
404	XQN2+BJ5FXK	SCREW,STEEL	23	
413	LSHD0051	SCREW,STEEL	3	
429	XQN14+B35	SCREW	2	
432	XQN14+B2	SCREW	11	
471	XQN14+B35FNK	SCREW,STEEL	1	
473	VMX2026	WASHER	4	
475	VMX2750	CUT WASHER,STEEL	3	
477	VMX2028	WASHER	2	
478	XQN14+B12FN	SCREW,STEEL	4	
503	LSHD0073	SCREW,STEEL	3	
504	XQN2+B35	SCREW,STEEL	1	
509	XQN2+BF8FN	SCREW,STEEL	1	
510	XQN2+BF5FXK	SCREW	2	
721	VMZW0660	INSTLATION SHEET	1	
731	LSSB0004	BATTERY	1	
E10	LSEP8201P1	MAIN C.B.A.	1	
E20	LSEP8197P1	REAR C.B.A.	1	
E30	LSEP8254P1	JACK C.B.A.	1	
E60	LSEP8178B1	LIQUID CRYSTAL DSP C.B.A.	1	

ELECTRICAL REPLACEMENT PARTS LIST

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
■ E10	LSEP8201P1	MAIN C.B.A.	1	(RTL)
■ E20	LSEP8197P1	REAR C.B.A.	1	(RTL)
■ E30	LSEP8254P1	JACK C.B.A.	1	(RTL)
■ E60	LSEP8178B1	LIQUID CRYSTAL DSP C.B.A.	1	(RTL)
■ E10	LSEP8201P1	MAIN C.B.A.	1	(RTL)
B1	K1KB40B00019	CONNECTOR (FEMALE)	1	
B2,B3	K1KA20A00233	CONNECTOR (MALE)	2	
C301	ECJ1VF1C104Z	C.CAPACITOR CH 16V 0.1U	1	
C302	ECJ0EF1C104Z	C.CAPACITOR CH 16V 0.1U	1	
C303	ECJ1VF1A105Z	C.CAPACITOR CH 10V 1U	1	
C304	VCUSJAV335ZF	C.CAPACITOR CH 35V 3.3U	1	
C305	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C310	ECJ1VB0J105K	C.CAPACITOR CH6.3V 1U	1	
C314	ECJ0EF1C104Z	C.CAPACITOR CH 16V 0.1U	1	
C1001	ECJ0EB1A104K	C.CAPACITOR CH 10V 0.1U	1	
C1002	ECJ1VB0J474K	C.CAPACITOR CH6.3V 0.47U	1	
C1003	ECJ0EB1A104K	C.CAPACITOR CH 10V 0.1U	1	
C1004	ECJ1VB1C104K	C.CAPACITOR CH 16V 0.1U	1	
C1005	ECJ0EB1A104K	C.CAPACITOR CH 10V 0.1U	1	
C1006	ECJ0EC1H101J	C.CAPACITOR CH 50V 100P	1	
C1007	ECJ0EB1A104K	C.CAPACITOR CH 10V 0.1U	1	
C1008	ECJ1VB0J105K	C.CAPACITOR CH6.3V 1U	1	
C1009,10	ECJ0EB1C103K	C.CAPACITOR CH 16V 0.01U	2	
C1013	ECJ0EB1E472K	C.CAPACITOR CH 25V 4700P	1	
C1016	ECJ0EB1E472K	C.CAPACITOR CH 25V 4700P	1	
C1019,20	ECJ0EC1H101J	C.CAPACITOR CH 50V 100P	2	
C1022	ECJ0EC1H101J	C.CAPACITOR CH 50V 100P	1	
C1024	ECJ0EC1H101J	C.CAPACITOR CH 50V 100P	1	
C1025-28	ECJ0EC1H470J	C.CAPACITOR CH 50V 47P	4	
C1029	ECJ2YF1C225Z	C.CAPACITOR CH 50V 2.2U	1	
C1030	ECEV1CA220S	E.CAPACITOR 16V 22U	1	
C1032	F1L1C106A011	C.CAPACITOR CH 16V 10U	1	
C1034	F1J0J4750004	C.CAPACITOR CH6.3V 4.7U	1	
C1036	F1J0J4750004	C.CAPACITOR CH6.3V 4.7U	1	
C1038	F1J0J4750004	C.CAPACITOR CH6.3V 4.7U	1	
C1039	F1J1C1050011	C.CAPACITOR CH 16V 1U	1	
C1040	VCUSQBH105ZF	C.CAPACITOR 1U	1	
C1041,42	F1J1C1050011	C.CAPACITOR CH 16V 1U	2	
C1043	ECJ0EB1H681K	C.CAPACITOR CH 50V 680P	1	
C1046	ECJ0EB1H152K	C.CAPACITOR CH 50V 1500P	1	
C1048	ECJ0EB1H222K	C.CAPACITOR CH 50V 2200P	1	
C1050	ECJ0EB1H102K	C.CAPACITOR CH 50V 1000P	1	
C1051	ECJ1VF1A105Z	C.CAPACITOR CH 10V 1U	1	
C1053	ECJ1VF1A105Z	C.CAPACITOR CH 10V 1U	1	
C1054	ERJ6GEYG272	M.RESISTOR CH 1/10W 2.7K	1	
C1055,56	ECJ1VF1A105Z	C.CAPACITOR CH 10V 1U	2	
C1058,59	ECJ1VF1A105Z	C.CAPACITOR CH 10V 1U	2	
C1060	ECST0JY106	T.CAPACITOR CH6.3V 10U	1	
C1062	ECJ1VF1A105Z	C.CAPACITOR CH 10V 1U	1	
C1063	ECJ1VB0J105K	C.CAPACITOR CH6.3V 1U	1	
C1064	ECJ1VF1A105Z	C.CAPACITOR CH 10V 1U	1	
C1065	ECJ0EB1C103K	C.CAPACITOR CH 16V 0.01U	1	
C1067	ECJ1VF1A105Z	C.CAPACITOR CH 10V 1U	1	
C1068	ECJ1VB0J105K	C.CAPACITOR CH6.3V 1U	1	
C1069	ECST0JZ106	T.CAPACITOR CH6.3V 10U	1	
C1070	ECJ1VF1A105Z	C.CAPACITOR CH 10V 1U	1	
C1071	ECJ2YF1C225Z	C.CAPACITOR CH 50V 2.2U	1	
C1073	VCUSQBH105ZF	C.CAPACITOR 1U	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
C1074	ECJ1VB0J105K	C.CAPACITOR CH6.3V 1U	1	
C1075	ECJ1VF1A105Z	C.CAPACITOR CH 10V 1U	1	
C1076	ECJ1VB0J105K	C.CAPACITOR CH6.3V 1U	1	
C1079	ECJ0EB1E472K	C.CAPACITOR CH 25V 4700P	1	
C1082	ECJ0EB1C103K	C.CAPACITOR CH 16V 0.01U	1	
C1086	ECJ0EB1A473K	C.CAPACITOR CH 10V 0.047U	1	
C1087	ECJ1VB1E103K	C.CAPACITOR CH 25V 0.01U	1	
C1088	ECST0JZ106	T.CAPACITOR CH6.3V 10U	1	
C1090	ECJ1VB1C104K	C.CAPACITOR CH 16V 0.1U	1	
C1092	ECJ0EB1C103K	C.CAPACITOR CH 16V 0.01U	1	
C2001	ECST0JY475	T.CAPACITOR CH6.3V 4.7U	1	
C2002	F1K1C4750017	C.CAPACITOR CH 16V 4.7U	1	
C2003,04	ECJ1VB1C104K	C.CAPACITOR CH 16V 0.1U	2	
C2005	ECJ2YB1A105K	C.CAPACITOR CH 10V 1U	1	
C2006	ECJ0EB1C103K	C.CAPACITOR CH 16V 0.01U	1	
C2007	ECJ1VB1E183K	C.CAPACITOR CH 25V 0.018U	1	
C2008	ECJ2VC1H471J	C.CAPACITOR CH 50V 470	1	
C2010	ECJ1VB1E183K	C.CAPACITOR CH 25V 0.018U	1	
C2012	ECJ2VB1E104K	C.CAPACITOR CH 25V 0.1U	1	
C2013,14	ECJ1VF1C104Z	C.CAPACITOR CH 16V 0.1U	2	
C2016	ECJ2YB1A105K	C.CAPACITOR CH 10V 1U	1	
C2017	ECJ0EB1C103K	C.CAPACITOR CH 16V 0.01U	1	
C2018	ECJ2YB1A105K	C.CAPACITOR CH 10V 1U	1	
C2021,22	ECJ0EF1C104Z	C.CAPACITOR CH 16V 0.1U	2	
C2024	ECJ0EF1C104Z	C.CAPACITOR CH 16V 0.1U	1	
C2027-29	ECJ0EB1A104K	C.CAPACITOR CH 10V 0.1U	3	
C2030	ECST0JY475	T.CAPACITOR CH6.3V 4.7U	1	
C3001	ECJ2VF1C105Z	C.CAPACITOR CH 16V 1U	1	
C3003	ECJ2YB1A105K	C.CAPACITOR CH 10V 1U	1	
C3004	ECJ2VF1C105Z	C.CAPACITOR CH 16V 1U	1	
C3005	ECST0GY226	T.CAPACITOR CH 4V 22U	1	
C3007	ECJ0EB1C103K	C.CAPACITOR CH 16V 0.01U	1	
C3008	ECST0JY106	T.CAPACITOR CH6.3V 10U	1	
C3009,10	ECJ0EF1C104Z	C.CAPACITOR CH 16V 0.1U	2	
C3011	ECJ0EB1C103K	C.CAPACITOR CH 16V 0.01U	1	
C3012	ECJ2VF1C105Z	C.CAPACITOR CH 16V 1U	1	
C3014	ECJ0EF1C104Z	C.CAPACITOR CH 16V 0.1U	1	
C3017-21	ECJ0EF1C104Z	C.CAPACITOR CH 16V 0.1U	5	
C3022	ECST0JY106	T.CAPACITOR CH6.3V 10U	1	
C3024	ECJ0EB1C103K	C.CAPACITOR CH 16V 0.01U	1	
C3026,27	ECJ0EF1C104Z	C.CAPACITOR CH 16V 0.1U	2	
C3030-34	ECJ0EF1C104Z	C.CAPACITOR CH 16V 0.1U	5	
C3035	ECJ0EC1H200J	C.CAPACITOR CH 50V 20P	1	
C3036	ECJ0EC1H220J	C.CAPACITOR CH 50V 22P	1	
C3101,02	ECJ0EB1C103K	C.CAPACITOR CH 16V 0.01U	2	
C3103	ECST0JY106	T.CAPACITOR CH6.3V 10U	1	
C3105,06	ECJ0EB1C103K	C.CAPACITOR CH 16V 0.01U	2	
C3107	ECJ2VF1C105Z	C.CAPACITOR CH 16V 1U	1	
C3109	ECJ0EF1C104Z	C.CAPACITOR CH 16V 0.1U	1	
C3110	ECJ2VF1C105Z	C.CAPACITOR CH 16V 1U	1	
C3112	ECJ2YB1A105K	C.CAPACITOR CH 10V 1U	1	
C3114	ECJ0EF1C104Z	C.CAPACITOR CH 16V 0.1U	1	
C3115	ECJ2VF1C105Z	C.CAPACITOR CH 16V 1U	1	
C3116	ECEV0GA101S	E.CAPACITOR 4V 100P	1	
C3117,18	ECJ2YB0J225K	C.CAPACITOR CH6.3V 2.2U	2	
C3119	ECEV0GA101S	E.CAPACITOR 4V 100P	1	
C3120	ECJ0EB1C103K	C.CAPACITOR CH 16V 0.01U	1	
C3121	ECST0JY226	T.CAPACITOR CH6.3V 22U	1	
C3202-05	ECJ0EF1C104Z	C.CAPACITOR CH 16V 0.1U	4	
C3206	ECJ0EC1H220J	C.CAPACITOR CH 50V 22P	1	
C3207	ECJ0EF1C104Z	C.CAPACITOR CH 16V 0.1U	1	
C3208	ECST0JY106	T.CAPACITOR CH6.3V 10U	1	
C3209,10	ECJ0EF1C104Z	C.CAPACITOR CH 16V 0.1U	2	
C3212	ECJ0EF1C104Z	C.CAPACITOR CH 16V 0.1U	1	
C3214,15	ECJ0EF1C104Z	C.CAPACITOR CH 16V 0.1U	2	
C3217,18	ECJ0EF1C104Z	C.CAPACITOR CH 16V 0.1U	2	
C3221	ECJ0EF1C104Z	C.CAPACITOR CH 16V 0.1U	1	
C3251	ECST0JY106	T.CAPACITOR CH6.3V 10U	1	
C3252	ECJ0EF1C104Z	C.CAPACITOR CH 16V 0.1U	1	
C3253	ECJ0EB1H221K	C.CAPACITOR CH 50V 220P	1	
C3254	ECJ2YB1A105K	C.CAPACITOR CH 10V 1U	1	
C3255,56	ECJ0EF1C104Z	C.CAPACITOR CH 16V 0.1U	2	
C3257	ECST0GY226	T.CAPACITOR CH 4V 22U	1	
C3259	ECJ0EB1C103K	C.CAPACITOR CH 16V 0.01U	1	
C3501,02	ECST0JY106	T.CAPACITOR CH6.3V 10U	2	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
C3504	ECST0JZ106	T.CAPACITOR CH6.3V 10U	1	
C3505,06	ECJ0EF1C104Z	C.CAPACITOR CH 16V 0.1U	2	
C3507,08	ECJ0EB1C103K	C.CAPACITOR CH 16V 0.01U	2	
C3509,10	ECJ0EF1C104Z	C.CAPACITOR CH 16V 0.1U	2	
C3511	ECJ2YB1A105K	C.CAPACITOR CH 10V 1U	1	
C3512,13	ECJ0EF1C104Z	C.CAPACITOR CH 16V 0.1U	2	
C3514,15	ECJ2YB1A105K	C.CAPACITOR CH 10V 1U	2	
C3516-19	ECJ0EB1C103K	C.CAPACITOR CH 16V 0.01U	4	
C3520-22	ECJ0EF1C104Z	C.CAPACITOR CH 16V 0.1U	3	
C3551	ECJ0EC1H220J	C.CAPACITOR CH 50V 22P	1	
C3552,53	ECJ0EC1H560J	C.CAPACITOR CH 50V 56P	2	
C3554	ECJ0EC1H220J	C.CAPACITOR CH 50V 22P	1	
C3555	ECJ1VB1C104K	C.CAPACITOR CH 16V 0.1U	1	
C3556	ECJ0EF1C104Z	C.CAPACITOR CH 16V 0.1U	1	
C3557	ECST0JY106	T.CAPACITOR CH6.3V 10U	1	
C3558	ECJ0EF1C104Z	C.CAPACITOR CH 16V 0.1U	1	
C3559,60	ECJ1VB1C104K	C.CAPACITOR CH 16V 0.1U	2	
C3561	ECJ0EB1C103K	C.CAPACITOR CH 16V 0.01U	1	
C3562	ECJ0EC1H220J	C.CAPACITOR CH 50V 22P	1	
C3563,64	ECJ0EC1H560J	C.CAPACITOR CH 50V 56P	2	
C3565	ECJ0EC1H220J	C.CAPACITOR CH 50V 22P	1	
C3566	ECJ0EF1C104Z	C.CAPACITOR CH 16V 0.1U	1	
C4302	ECJ1VF1C104Z	C.CAPACITOR CH 16V 0.1U	1	
C4305,06	ECJ2YB1A105K	C.CAPACITOR CH 10V 1U	2	
C4307	ECST0JY106	T.CAPACITOR CH6.3V 10U	1	
C4308	ECJ1VF1C104Z	C.CAPACITOR CH 16V 0.1U	1	
C4310	ECJ2YB1A105K	C.CAPACITOR CH 10V 1U	1	
C4312	ECJ1VF1C104Z	C.CAPACITOR CH 16V 0.1U	1	
C4501	ECJ0EB1C103K	C.CAPACITOR CH 16V 0.01U	1	
C4503	ECJ2YB1A105K	C.CAPACITOR CH 10V 1U	1	
C4504	ECJ2VB1C104K	C.CAPACITOR CH 16V 0.1U	1	
C4505	ECST0GY226	T.CAPACITOR CH 4V 22U	1	
C4507,08	ECJ0EB1C103K	C.CAPACITOR CH 16V 0.01U	2	
C4509	ECST0JY106	T.CAPACITOR CH6.3V 10U	1	
C4511,12	ECST0GY226	T.CAPACITOR CH 4V 22U	2	
C4513	ECJ2YB1A105K	C.CAPACITOR CH 10V 1U	1	
C4514,15	ECST0JY335	T.CAPACITOR CH6.3V 3.3U	2	
C4516	ECJ0EF1C104Z	C.CAPACITOR CH 16V 0.1U	1	
C4517	ECST0JY106	T.CAPACITOR CH6.3V 10U	1	
C4518-20	ECJ2YB1A105K	C.CAPACITOR CH 10V 1U	3	
C5001	ECST0JY106	T.CAPACITOR CH6.3V 10U	1	
C5002	ECST0JY226	T.CAPACITOR CH6.3V 22U	1	
C5004	ECJ0EB1H681K	C.CAPACITOR CH 50V 680P	1	
C5005	ECJ0EB1C103K	C.CAPACITOR CH 16V 0.01U	1	
C5007	ECJ0EB1C103K	C.CAPACITOR CH 16V 0.01U	1	
C5009	ECJ0EF1C104Z	C.CAPACITOR CH 16V 0.1U	1	
C5011	ECJ0EB1C103K	C.CAPACITOR CH 16V 0.01U	1	
C5012	ECJ0EF1C104Z	C.CAPACITOR CH 16V 0.1U	1	
C5013-16	ECUX1H120JCQ	C.CAPACITOR CH 50V 12P	4	
C6001,02	ECJ1VB1C104K	C.CAPACITOR CH 16V 0.1U	2	
C6003	ECST0JY106	T.CAPACITOR CH6.3V 10U	1	
C6004	ECJ1VB1C104K	C.CAPACITOR CH 16V 0.1U	1	
C6005	ECST0JY106	T.CAPACITOR CH6.3V 10U	1	
C6006	ECJ1VB1C104K	C.CAPACITOR CH 16V 0.1U	1	
C6007	ECST0JY106	T.CAPACITOR CH6.3V 10U	1	
C6009	ECJ0EB1C103K	C.CAPACITOR CH 16V 0.01U	1	
C6010	ECJ1VB1C104K	C.CAPACITOR CH 16V 0.1U	1	
C6012	ECJ0EF1C104Z	C.CAPACITOR CH 16V 0.1U	1	
C6013	ECJ1VB0J105K	C.CAPACITOR CH6.3V 1U	1	
C6014	ECJ0EB1C103K	C.CAPACITOR CH 16V 0.01U	1	
C6015	ECJ0EC1H100D	C.CAPACITOR CH 50V 10P	1	
C6016	ECJ0EC1H090D	C.CAPACITOR CH 50V 9P	1	
C6017	ECJ0EC1H101J	C.CAPACITOR CH 50V 100P	1	
C6018	ECJ0EC1H030C	C.CAPACITOR CH 50V 3P	1	
C6020	ECJ0EF1C104Z	C.CAPACITOR CH 16V 0.1U	1	
C6025-27	ECJ0EB1C103K	C.CAPACITOR CH 16V 0.01U	3	
C6030	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
C6031	ECJ0EB1C103K	C.CAPACITOR CH 16V 0.01U	1	
C6032	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
C6035	ECJ0EF1C104Z	C.CAPACITOR CH 16V 0.1U	1	
C6036	ECJ0EB1C103K	C.CAPACITOR CH 16V 0.01U	1	
C6038	ECJ0EF1C104Z	C.CAPACITOR CH 16V 0.1U	1	
C6039,40	ECJ0EB1C103K	C.CAPACITOR CH 16V 0.01U	2	
C6041	ECJ2YB1A105K	C.CAPACITOR CH 10V 1U	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
D1002	1SS355TE17	DIODE	1	B0ACCK000005
D1002	MA111	DIODE	1	MA2J11100L
D1002	MA2J111008	DIODE	1	
D1003	1SS355TE17	DIODE	1	B0ACCK000005
D1003	MA111	DIODE	1	MA2J11100L
D1003	MA2J111008	DIODE	1	
D1005	1SS355TE17	DIODE	1	B0ACCK000005
D1005	MA111	DIODE	1	MA2J11100L
D1005	MA2J111008	DIODE	1	
D1006	MA8100-H	DIODE	1	
D1009	B0ACCK000003	DIODE	1	
D1009	MA2S111008	DIODE	1	
D1009	MA2S11100L	DIODE	1	
D3001	B0ACCK000003	DIODE	1	
D3001	MA2S111008	DIODE	1	
D3001	MA2S11100L	DIODE	1	
D6001,02	B0JCDD000002	DIODE	2	
D6002	MA2S728008	DIODE	1	
D6002	MA2S72800L	DIODE	1	
D6003	B0JCDD000002	DIODE	1	
D6003	MA2S728008	DIODE	1	
D6003	MA2S72800L	DIODE	1	
D6004	B0JCDD000002	DIODE	1	
D6004	MA2S728008	DIODE	1	
D6004	MA2S72800L	DIODE	1	
D6005	MA147	DIODE	1	
D6006	B0ACCK000003	DIODE	1	
D6006	MA2S111008	DIODE	1	
D6006	MA2S11100L	DIODE	1	
D6007	B0JCDD000002	DIODE	1	
D6011	B0JCDD000002	DIODE	1	
D6011	MA2S728008	DIODE	1	
D6011	MA2S72800L	DIODE	1	
FP2	K1MN28A00025	CONNECTOR	1	
FP3	K1MN10A00030	CONNECTOR	1	
FP4	K1MN18B00089	CONNECTOR	1	
FP5	K1MN12B00102	CONNECTOR	1	
FP7	K1MN28B00046	CONNECTOR	1	
FP8	K1MN26B00075	CONNECTOR	1	
FP9	K1MN20B00061	CONNECTOR	1	
FP10	K1MN07B00023	CONNECTOR	1	
IC301	MN52A4	IC	1	
IC1001	C0DBCMC00003	IC	1	
IC1002,03	C0DBEFB00001	IC	2	
IC2001	C0GBG0000014	IC	1	
IC3001	C1AB00001130	IC	1	
IC3002	AN2903FJQ-V	IC	1	
IC3201	C1AB00001132	IC	1	
IC3202	C1AB00001131	IC	1	
IC3202	C1AB00001612	IC	1	
IC3501	C1AB00001280	IC	1	
IC3502	C0ABCA000059	IC	1	
IC3502	C0ABCA000064	IC	1	
IC3502	C0ABCZ000008	IC	1	
IC3502	C0ABCZ000008	IC	1	
IC3503,04	C9ZB00000281	IC	2	
IC4301	C0FBZH000013	IC	1	
IC4301	C0FBZJ000005	IC	1	
IC5001	AN3732FJMEFV	IC	1	
IC6001	C2DBLJ000012	IC	1	
IC6003	C0CBCBC00023	IC	1	
IC6004	C0EBD0000123	IC	1	
IC6005	C0ABCA000059	IC	1	
IC6005	C0ABCA000064	IC	1	
IC6005	C0ABCZ000008	IC	1	
IC6005	C0ABCZ000008	IC	1	
IC6007	C3EBFG000007	IC	1	
IC6007	C3EBFG000009	IC	1	
IC6008	C1ZBZ0001483	IC	1	
IC6010	C0CBCAC00024	IC	1	
IC6011	C0CBCAC00026	IC	1	
L301	J0JBC0000025	FILTER	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
L302	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
L303	G1C100M00010	COIL 10UH	1	
L306	J0JBC0000080	FILTER	1	
L1001,02	G1C100MA0065	COIL 10UH	2	
L1003,04	G1C220MA0065	COIL 22UH	2	
L1005	G1C330MA0065	COIL 33UH	1	
L1006	G1C470MA0065	COIL 47UH	1	
L1007	G1C4R7MA0031	COIL 4.7UH	1	
L1008	G1C100K00020	COIL 10UH	1	
L1009	G1C4R7M00014	COIL 4.7UH	1	
L1010	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	1	
L1011	G1C100K00020	COIL 10UH	1	
L1012	G1C4R7MA0031	COIL 4.7UH	1	
L1013	G1C4R7MA0002	COIL 4.7UH	1	
L1014,15	G1C100K00020	COIL 10UH	2	
L1016-18	G1C4R7MA0031	COIL 4.7UH	3	
L1020,21	G1C470J00006	COIL 47UH	2	
L3001	VLF1144A102	FILTER	1	
L3002	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
L3003,04	VLF1144A102	FILTER	2	
L3005	J0JCC0000119	FILTER	1	
L3006	G1C100M00010	COIL 10UH	1	
L3008	G1C100M00010	COIL 10UH	1	
L3009	G1C100K00020	COIL 10UH	1	
L3010,11	VLF1144A102	FILTER	2	
L3201	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
L3202	G1C100K00020	COIL 10UH	1	
L3203	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
L3205	G1C100M00010	COIL 10UH	1	
L3206,07	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	2	
L3501	G1C100K00020	COIL 10UH	1	
L3502,03	VLF1144A102	FILTER	2	
L3504	G1C100K00020	COIL 10UH	1	
L3505-07	VLQ0808J330	COIL 33UH	3	
L3508-10	G1C330JA0010	COIL 33UH	3	
L4301	G1C100KA0019	COIL 10UH	1	
L4302	VLF1144A102	FILTER	1	
L4501	LSLJDJA470KF	COIL 47UH	1	
L4502	G1C100K00020	COIL 10UH	1	
L4503	VLF1144A102	FILTER	1	
L5001	G1C101K00021	COIL 100UH	1	
L5002	G1C100K00020	COIL 10UH	1	
L6003	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	1	
P1	K1KB02A00030	CONNECTOR (MALE)	1	
Q1001	B1GDCFJJ0027	TRANSISTOR	1	
Q1001	UNR9111J08	TRANSISTOR	1	
Q1003	B1GDCFJA0015	TRANSISTOR	1	
Q1003	UNR9115J08	TRANSISTOR	1	
Q1004-06	B1ZBZ0000027	TRANSISTOR	3	
Q1007	B1ADMD000009	TRANSISTOR	1	
Q1008	B1ZBZ0000035	TRANSISTOR	1	
Q1008	XN09D6100L	TRANSISTOR	1	
Q1009	B1ZBZ0000035	TRANSISTOR	1	
Q1009	XN09D6100L	TRANSISTOR	1	
Q1010	2SC559200L	TRANSISTOR	1	
Q1010	B1ABPB000001	TRANSISTOR	1	
Q1021	2SC559200L	TRANSISTOR	1	
Q1021	B1ABPB000001	TRANSISTOR	1	
Q1023	B1ABCF000098	TRANSISTOR	1	
Q1023	B1ABCF000099	TRANSISTOR	1	
Q1024	2SC559200L	TRANSISTOR	1	
Q1024	B1ABPB000001	TRANSISTOR	1	
Q1025	XP0450100L	TRANSISTOR	1	
Q1026	2SB1462J08	TRANSISTOR	1	
Q1026	B1ADCF000072	TRANSISTOR	1	
Q1027	2SC559200L	TRANSISTOR	1	
Q1027	B1ABPB000001	TRANSISTOR	1	
Q1028	2SD2216J08	TRANSISTOR	1	
Q1028	B1ABCF000104	TRANSISTOR	1	
Q1030	2SD1819A0L	TRANSISTOR	1	
Q1030	B1ABCF000020	TRANSISTOR	1	
Q1031	2SD2216J08	TRANSISTOR	1	
Q1031	B1ABCF000104	TRANSISTOR	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
Q1034	2SD2216J08	TRANSISTOR	1	
Q1034	B1ABCF000104	TRANSISTOR	1	
Q2001	2SD1819A0L	TRANSISTOR	1	
Q2001	B1ABCF000020	TRANSISTOR	1	
Q3001	B1GDCFLL0019	TRANSISTOR	1	
Q3001	UNR9112J08	TRANSISTOR	1	
Q3002	B1GBCFNN0029	TRANSISTOR	1	
Q3002	UNR9213J08	TRANSISTOR	1	
Q3003-05	2SD262300L	TRANSISTOR	3	
Q3501	2SB1462J08	TRANSISTOR	1	
Q3501	B1ADCF000072	TRANSISTOR	1	
Q3502	2SB1218A0L	TRANSISTOR	1	
Q3502	B1ADCF000063	TRANSISTOR	1	
Q3503	2SD2216J08	TRANSISTOR	1	
Q3503	B1ABCF000104	TRANSISTOR	1	
Q6005	B1GBCFJA0012	TRANSISTOR	1	
Q6005	UNR9215J08	TRANSISTOR	1	
Q6006	B1GBCFNN0029	TRANSISTOR	1	
Q6006	UNR9213J08	TRANSISTOR	1	
Q6007	2SD1820A	TRANSISTOR	1	
Q6008	2SB09700RL	TRANSISTOR	1	
Q6008	2SB1585	TRANSISTOR	1	
R308	ERJ2GEJ101	M.RESISTOR CH 1/16W 100	1	
R309	ERJ2GEJ221	M.RESISTOR CH 1/16W 220	1	
R310	ERJ2GE0R00	M.RESISTOR CH 1/16W 0	1	
R312	J0JAC0000045	FILTER	1	
R322	ERJ2GE0R00	M.RESISTOR CH 1/16W 0	1	
R1001	ERJ2GEJ104	M.RESISTOR CH 1/16W 100K	1	
R1002	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
R1005	ERJ2GEJ223	M.RESISTOR CH 1/16W 22K	1	
R1006	ERJ2GEJ154	M.RESISTOR CH 1/16W 150K	1	
R1007	ERJ3RBD243	M.RESISTOR CH 1/16W 24K	1	D0HB243ZA002
R1008	ERJ2GEJ273	M.RESISTOR CH 1/16W 27K	1	
R1009	ERJ2GEJ473	M.RESISTOR CH 1/16W 47K	1	
R1010	ERJ2GEJ154	M.RESISTOR CH 1/16W 150K	1	
R1011	ERJ2GEJ124	M.RESISTOR CH 1/16W 120K	1	
R1012	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	1	
R1013,14	ERJ2GEJ472	M.RESISTOR CH 1/16W 4.7K	2	
R1015-17	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	3	
R1018	ERJ2GEJ151	M.RESISTOR CH 1/16W 150	1	
R1019	ERJ2GEJ471	M.RESISTOR CH 1/16W 470	1	
R1020	ERJ2GEJ682	M.RESISTOR CH 1/16W 6.8K	1	
R1021	ERJ2GEJ562	M.RESISTOR CH 1/16W 5.6K	1	
R1022,23	ERJ2GEJ682	M.RESISTOR CH 1/16W 6.8K	2	
R1024	D0HA682ZA001	M.RESISTOR CH 1/16W 6.8K	1	
R1025,26	D0HA820ZA002	M.RESISTOR CH 1/16W 82	2	
R1027	D0HA302ZA001	M.RESISTOR CH 1/16W 3K	1	
R1028	ERJ2GE0R00	M.RESISTOR CH 1/16W 0	1	
R1030	D0HA272ZA001	M.RESISTOR CH 1/16W 2.7K	1	
R1031,32	D0HA820ZA002	M.RESISTOR CH 1/16W 82	2	
R1033	D0HA302ZA001	M.RESISTOR CH 1/16W 3K	1	
R1034	D0HA101ZA001	M.RESISTOR CH 1/16W 100	1	
R1036	D0HA681ZA001	M.RESISTOR CH 1/16W 680	1	
R1037,38	D0HA820ZA002	M.RESISTOR CH 1/16W 82	2	
R1039	D0HA302ZA001	M.RESISTOR CH 1/16W 3K	1	
R1040	ERJ2GE0R00	M.RESISTOR CH 1/16W 0	1	
R1042	ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R1043	VRJSQ6D273Z	M.RESISTOR CH 1/16W 27K	1	
R1044,45	D0HA820ZA002	M.RESISTOR CH 1/16W 82	2	
R1046	D0HA302ZA001	M.RESISTOR CH 1/16W 3K	1	
R1047	ERJ2GE0R00	M.RESISTOR CH 1/16W 0	1	
R1048	ERJ2GEJ471	M.RESISTOR CH 1/16W 470	1	
R1049	ERJ2GEJ221	M.RESISTOR CH 1/16W 220	1	
R1050	D0HA272ZA001	M.RESISTOR CH 1/16W 2.7K	1	
R1051	VRJSQ6D104Z	M.RESISTOR CH 1/16W 100K	1	
R1052	ERJ2GEJ472	M.RESISTOR CH 1/16W 4.7K	1	
R1053	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
R1054	ERJ2GEJ472	M.RESISTOR CH 1/16W 4.7K	1	
R1069	ERJ2GEJ271	M.RESISTOR CH 1/16W 270	1	
R1070	ERJ2GEJ470	M.RESISTOR CH 1/16W 47	1	
R1071	D0HA472ZA001	M.RESISTOR CH 1/16W 4.7K	1	
R1072	D0HA153ZA001	M.RESISTOR CH 1/16W 15K	1	
R1073	ERJ2GEJ222	M.RESISTOR CH 1/16W 2.2K	1	
R1074	ERJ2GEJ221	M.RESISTOR CH 1/16W 220	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R1075	ERJ2GEJ560	M.RESISTOR CH 1/16W 56	1	
R1078	ERJ2GEJ221	M.RESISTOR CH 1/16W 220	1	
R1079	ERJ2GEJ222	M.RESISTOR CH 1/16W 2.2K	1	
R1080	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
R1081,82	ERJ2GEJ222	M.RESISTOR CH 1/16W 2.2K	2	
R1085	ERJ2GEJ222	M.RESISTOR CH 1/16W 2.2K	1	
R1086-89	ERJ2GEJ473	M.RESISTOR CH 1/16W 47K	4	
R1090	ERJ2GEJ151	M.RESISTOR CH 1/16W 150	1	
R1091	ERJ2GEJ223	M.RESISTOR CH 1/16W 22K	1	
R1092	ERJ2GEJ332	M.RESISTOR CH 1/16W 3.3K	1	
R1095	ERJ2GEJ105	M.RESISTOR CH 1/16W 1M	1	
R1096	ERJ2GEJ824	M.RESISTOR CH 1/16W 820K	1	
R1097	ERJ2GEJ154	M.RESISTOR CH 1/16W 150K	1	
R2001	ERJ2GEJ122	M.RESISTOR CH 1/16W 1.2K	1	
R2002	ERJ2GEJ393	M.RESISTOR CH 1/16W 39K	1	
R2003	ERJ2GEJ273	M.RESISTOR CH 1/16W 27K	1	
R2004	ERJ2GEJ683	M.RESISTOR CH 1/16W 68K	1	
R2005,06	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	2	
R2007	ERJ2GEJ824	M.RESISTOR CH 1/16W 820K	1	
R2008	ERJ2GEJ474	M.RESISTOR CH 1/16W 470K	1	
R2009	ERJ2GEJ225	M.RESISTOR CH 1/16W 2.2M	1	
R2010	ERJ2GE0R00	M.RESISTOR CH 1/16W 0	1	
R2011,12	ERJ2GEJ472	M.RESISTOR CH 1/16W 4.7K	2	
R2013	ERJ2GEJ225	M.RESISTOR CH 1/16W 2.2M	1	
R2014	ERJ2GEJ222	M.RESISTOR CH 1/16W 2.2K	1	
R2015,16	ERJ8GEYJR27	M.RESISTOR CH 1/8W 0.27	2	
R2017	ERJ2GEJ101	M.RESISTOR CH 1/16W 100	1	
R2018,19	ERJ2GEJ471	M.RESISTOR CH 1/16W 470	2	
R2020,21	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	2	
R2022	ERJ2GEJ333	M.RESISTOR CH 1/16W 33K	1	
R2026	ERJ8GEY0R00	M.RESISTOR CH 1/8W 0	1	
R3001	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
R3005	ERJ2GEJ153	M.RESISTOR CH 1/16W 15K	1	
R3006	ERJ2GEJ682	M.RESISTOR CH 1/16W 6.8K	1	
R3011	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
R3015	ERJ2GEJ153	M.RESISTOR CH 1/16W 15K	1	
R3016	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
R3019	ERJ2GEJ153	M.RESISTOR CH 1/16W 15K	1	
R3020	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
R3024	ERJ2GE0R00	M.RESISTOR CH 1/16W 0	1	
R3025	ERJ2GEJ105	M.RESISTOR CH 1/16W 1M	1	
R3026	ERJ2GE0R00	M.RESISTOR CH 1/16W 0	1	
R3030,31	ERJ2GEJ473	M.RESISTOR CH 1/16W 47K	2	
R3032-34	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	3	
R3101	ERJ2GEJ750	M.RESISTOR CH 1/16W 75	1	
R3102,03	ERJ2GEJ680	M.RESISTOR CH 1/16W 68	2	
R3104-07	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	4	
R3108	ERJ2GEJ182	M.RESISTOR CH 1/16W 1.8K	1	
R3109	ERJ2GEJ391	M.RESISTOR CH 1/16W 390	1	
R3111	ERJ2GEJ182	M.RESISTOR CH 1/16W 1.8K	1	
R3112	ERJ2GEJ391	M.RESISTOR CH 1/16W 390	1	
R3113	ERJ2GEJ394	M.RESISTOR CH 1/16W 390K	1	
R3114	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
R3115	ERJ2GEJ392	M.RESISTOR CH 1/16W 3.9K	1	
R3116	ERJ2GEJ562	M.RESISTOR CH 1/16W 5.6K	1	
R3117	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
R3201	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	1	
R3202	ERJ2GEJ100	M.RESISTOR CH 1/16W 10	1	
R3203	ERJ2GEJ470	M.RESISTOR CH 1/16W 47	1	
R3204	ERJ2RKF2871	M.RESISTOR CH 1/16W 870	1	
R3205	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
R3206	ERJ2GEJ153	M.RESISTOR CH 1/16W 15K	1	
R3207,08	ERJ2GEJ681	M.RESISTOR CH 1/16W 680	2	
R3209	ERJ2GEJ273	M.RESISTOR CH 1/16W 27K	1	
R3210	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
R3211	ERJ2GEJ223	M.RESISTOR CH 1/16W 22K	1	
R3212	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	1	
R3251-54	ERJ2GEJ330	M.RESISTOR CH 1/16W 33	4	
R3255,56	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	2	
R3257	ERJ2RHD622	M.RESISTOR CH 1/16W 6.2K	1	
R3258	ERJ2GEJ101	M.RESISTOR CH 1/16W 100	1	
R3259-61	ERJ2GE0R00	M.RESISTOR CH 1/16W 0	3	
R3262	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R3263-66	ERJ2GEJ220	M.RESISTOR CH 1/16W 22	4	
R3501	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R3503	ERJ2RHD332	M.RESISTOR CH 1/16W 3.3K	1	
R3504	ERJ2RHD471	M.RESISTOR CH 1/16W 470	1	
R3505,06	ERJ2RHD821	M.RESISTOR CH 1/16W 820	2	
R3507	ERJ2RHD392	M.RESISTOR CH 1/16W 3.9K	1	
R3508	ERJ2GEJ271	M.RESISTOR CH 1/16W 270	1	
R3551,52	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	2	
R3553	ERJ2GEJ122	M.RESISTOR CH 1/16W 1.2K	1	
R3554	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
R3555	ERJ2GEJ183	M.RESISTOR CH 1/16W 18K	1	
R3556,57	ERJ2GEJ332	M.RESISTOR CH 1/16W 3.3K	2	
R3558	ERJ2GEJ473	M.RESISTOR CH 1/16W 47K	1	
R3559	ERJ2GEJ222	M.RESISTOR CH 1/16W 2.2K	1	
R3560,61	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	2	
R3562	ERJ2GEJ222	M.RESISTOR CH 1/16W 2.2K	1	
R3563	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
R3564	ERJ2GEJ562	M.RESISTOR CH 1/16W 5.6K	1	
R3565	ERJ2GEJ331	M.RESISTOR CH 1/16W 330	1	
R3566,67	ERJ2GE0R00	M.RESISTOR CH 1/16W 0	2	
R3904,05	ERJ2GE0R00	M.RESISTOR CH 1/16W 0	2	
R4301,02	ERJ2GEJ101	M.RESISTOR CH 1/16W 100	2	
R4305	ERJ2GEJ100	M.RESISTOR CH 1/16W 10	1	
R4501	ERJ2GEJ472	M.RESISTOR CH 1/16W 4.7K	1	
R4503,04	ERJ2GEJ100	M.RESISTOR CH 1/16W 10	2	
R4505	ERJ2GEJ681	M.RESISTOR CH 1/16W 680	1	
R4506,07	ERJ2GEJ101	M.RESISTOR CH 1/16W 100	2	
R4508	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	1	
R4510	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	1	
R4512	ERJ2GEJ472	M.RESISTOR CH 1/16W 4.7K	1	
R4513,14	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	2	
R4515,16	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	2	
R4517	ERJ2GE0R00	M.RESISTOR CH 1/16W 0	1	
R5005-08	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	4	
R5009	ERJ2GEJ182	M.RESISTOR CH 1/16W 1.8K	1	
R5010	ERJ2GEJ682	M.RESISTOR CH 1/16W 6.8K	1	
R5011	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R6001	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	1	
R6005	ERJ2GEJ331	M.RESISTOR CH 1/16W 330	1	
R6007	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	1	
R6013	ERJ2GE0R00	M.RESISTOR CH 1/16W 0	1	
R6014	ERJ2GEJ474	M.RESISTOR CH 1/16W 470K	1	
R6015	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	1	
R6016	ERJ2GEJ274	M.RESISTOR CH 1/16W 270K	1	
R6017	ERJ2GE0R00	M.RESISTOR CH 1/16W 0	1	
R6019	ERJ2GEJ473	M.RESISTOR CH 1/16W 47K	1	
R6020	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
R6024	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
R6027	ERJ2GEJ473	M.RESISTOR CH 1/16W 47K	1	
R6028	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
R6029	ERJ2GEJ473	M.RESISTOR CH 1/16W 47K	1	
R6033-36	ERJ2GEJ473	M.RESISTOR CH 1/16W 47K	4	
R6037,38	ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	2	
R6041,42	ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	2	
R6043-45	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	3	
R6046	ERJ2GEJ473	M.RESISTOR CH 1/16W 47K	1	
R6047	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	1	
R6049	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	1	
R6051	ERJ2GE0R00	M.RESISTOR CH 1/16W 0	1	
R6054	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	1	
R6055	ERJ2GEJ563	M.RESISTOR CH 1/16W 56K	1	
R6056	ERJ2GEJ473	M.RESISTOR CH 1/16W 47K	1	
R6057,58	ERJ2GEJ563	M.RESISTOR CH 1/16W 56K	2	
R6059,60	ERJ2GEJ473	M.RESISTOR CH 1/16W 47K	2	
R6061	ERJ2GEJ563	M.RESISTOR CH 1/16W 56K	1	
R6062	ERJ2GEJ392	M.RESISTOR CH 1/16W 3.9K	1	
R6063	ERJ2GEJ473	M.RESISTOR CH 1/16W 47K	1	
R6064,65	ERJ2GEJ154	M.RESISTOR CH 1/16W 150K	2	
R6066	ERJ2GEJ473	M.RESISTOR CH 1/16W 47K	1	
R6067-70	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	4	
R6071-74	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	4	
R6075	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	1	
R6076	ERJ2GEJ105	M.RESISTOR CH 1/16W 1M	1	
R6077	ERJ2GEJ331	M.RESISTOR CH 1/16W 330	1	
R6078,79	ERJ2GEJ472	M.RESISTOR CH 1/16W 4.7K	2	
R6080	ERJ2GE0R00	M.RESISTOR CH 1/16W 0	1	
R6081	ERJ2GEJ472	M.RESISTOR CH 1/16W 4.7K	1	

Components identified with the mark ⚠ have the special characterisitics for safety.
When replacing any of these components, use onlly the same type.

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R6082	ERJ2GEJ104	M.RESISTOR CH 1/16W 100K	1	
R6083	ERJ8GEYJ270	M.RESISTOR CH 1/8W 27	1	
R6084-87	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	4	
R6088	ERJ8GEYJ220	M.RESISTOR CH 1/8W 22	1	
R6089,90	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	2	
R6091-95	ERJ2GEJ473	M.RESISTOR CH 1/16W 47K	5	
R6096	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
R6097	ERJ2GEJ473	M.RESISTOR CH 1/16W 47K	1	
R6098	ERJ2GEJ394	M.RESISTOR CH 1/16W 390K	1	
R6099-03	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	5	
R6104	ERJ2GEJ105	M.RESISTOR CH 1/16W 1M	1	
R6105	ERJ2GEJ222	M.RESISTOR CH 1/16W 2.2K	1	
R6107,08	ERJ2GEJ331	M.RESISTOR CH 1/16W 330	2	
R6110,11	ERJ2GE0R00	M.RESISTOR CH 1/16W 0	2	
R6112	ERJ2GEJ123	M.RESISTOR CH 1/16W 12K	1	
R6114	ERJ2GEJ822	M.RESISTOR CH 1/16W 8.2K	1	
R6115	ERJ2GEJ272	M.RESISTOR CH 1/16W 2.7K	1	
R6117	ERJ2GEJ104	M.RESISTOR CH 1/16W 100K	1	
R6119	ERJ2GEJ123	M.RESISTOR CH 1/16W 12K	1	
R6120	ERJ2GEJ104	M.RESISTOR CH 1/16W 100K	1	
R6121	ERJ2GEJ822	M.RESISTOR CH 1/16W 8.2K	1	
R6123	ERJ2GEJ272	M.RESISTOR CH 1/16W 2.7K	1	
R6124,25	ERJ2GEJ104	M.RESISTOR CH 1/16W 100K	2	
R6126	ERJ2GEJ332	M.RESISTOR CH 1/16W 3.3K	1	
R6128,29	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	2	
R6130	ERJ2GEJ332	M.RESISTOR CH 1/16W 3.3K	1	
R6134-36	ERJ2GEJ332	M.RESISTOR CH 1/16W 3.3K	3	
R6137	ERJ2RHD513	M.RESISTOR CH 1/16W 51K	1	
R6138	ERJ2RHD183	M.RESISTOR CH 1/16W 18K	1	
R6139	ERJ2GEJ222	M.RESISTOR CH 1/16W 2.2K	1	
R6140	ERJ2GE0R00	M.RESISTOR CH 1/16W 0	1	
R6141	ERJ2GEJ222	M.RESISTOR CH 1/16W 2.2K	1	
R6142,43	ERJ2GEJ472	M.RESISTOR CH 1/16W 4.7K	2	
R6144	ERJ2GEJ681	M.RESISTOR CH 1/16W 680	1	
R6145	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
R6146-48	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	3	
R6149	ERJ2GEJ104	M.RESISTOR CH 1/16W 100K	1	
R6150	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
R6152,53	ERJ2GEJ332	M.RESISTOR CH 1/16W 3.3K	2	
R6155	ERJ2GEJ153	M.RESISTOR CH 1/16W 15K	1	
R6157	ERJ2GEJ153	M.RESISTOR CH 1/16W 15K	1	
R6160,61	ERJ2GEJ101	M.RESISTOR CH 1/16W 100	2	
R6162	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	1	
R6165,66	ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	2	
R6168	ERJ2GEJ472	M.RESISTOR CH 1/16W 4.7K	1	
R6169	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	1	
R6177	ERJ2GE0R00	M.RESISTOR CH 1/16W 0	1	
T1001	G5DYA0000041	TRANSFORMER	1	
X301	H1A3605B0003	CRYSTAL OSCILLATOR	1	
X3001	H0A245500003	CRYSTAL OSCILLATOR	1	
X6002	LSSX0071	CRYSTAL OSCILLATOR	1	
X6003	LSSX0023	CRYSTAL OSCILLATOR	1	
■ E20	LSEP8197P1	REAR C.B.A.	1	(RTL)
B1201	K1KA40A00177	CONNECTOR (MALE)	1	
C1201,02	ECJ1VF1A105Z	C.CAPACITOR CH 10V 1U	2	
D1201,02	RD12S	DIODE	2	
D7001-03	B0BD6R800009	DIODE	3	
D7004	RD6.2S	ZENER DIODE	1	
D7005	B0BD6R800009	DIODE	1	
D7006	RD6.2S	ZENER DIODE	1	
⚠ IP1201	K5H2022A0008	FUSE	1	
JK7001	LSYK0947	BATTERY COVER ASS'Y	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
JK7003	LSJJ0190	DV JACK SOCKE	1	
L1201,02	J0JGC0000034	FERRITE BEAD CHIP	2	
L7001-05	VLF1144A102	FILTER	5	
R7001	ERJ3GEYJ331	M.RESISTOR CH 1/16W 330	1	
R7003	ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	1	
SW1201	ESE22MH4	SWITCH	1	
		MISCELLANEOUS		
	LSSB0004	BATTERY	1	
■ E30	LSEP8254P1	JACK C.B.A.	1	(RTL)
C4803	ECJ2YB1A105K	C.CAPACITOR CH 10V 1U	1	
C4806	ECST0JY226	T.CAPACITOR CH6.3V 22U	1	
C4807	ECJ1VC1H102K	C.CAPACITOR CH 50V 1000P	1	
C4809	ECJ2YB1A105K	C.CAPACITOR CH 10V 1U	1	
C4810	ECJ1VB1H102K	C.CAPACITOR CH 50V 1000P	1	
C4812	ECJ1VB1H103K	C.CAPACITOR CH 50V 0.01U	1	
C4815,16	ECJ2YB1A105K	C.CAPACITOR CH 10V 1U	2	
C4817,18	ECJ1VB1H102K	C.CAPACITOR CH 50V 1000P	2	
C4819-25	ECUX1H391JCV	C.CAPACITOR CH 50V 390P	7	
C4826	ECJ1VC1H102K	C.CAPACITOR CH 50V 1000P	1	
C4827	ECUX1H391JCV	C.CAPACITOR CH 50V 390P	1	
C4828,29	ECJ1VC1H102K	C.CAPACITOR CH 50V 1000P	2	
C4830	ECUX1H391JCV	C.CAPACITOR CH 50V 390P	1	
C4831	ECJ1VC1H102K	C.CAPACITOR CH 50V 1000P	1	
D4803	B0BD6R800009	DIODE	1	
FP4801	K1MN07B00023	CONNECTOR	1	
FP4802	K1MN06B00029	CONNECTOR	1	
JK4801	K2HC104B0017	STEREOMICROPHONE JACK SOC	1	
JK4802	K2HD103E0010	A/V JACK	1	
L4801,02	J0JBC0000036	FERRITE CORE	2	
L4803-05	VLF1315A102	FILTER	3	J0JHC0000015
L4806	J0JBC0000036	FILTER	1	
Q4801	2SB1462J08	TRANSISTOR	1	
Q4801	B1ADCF000072	TRANSISTOR	1	
Q4802	2SD2216J08	TRANSISTOR	1	
Q4802	B1ABCF000104	TRANSISTOR	1	
Q4804	2SD2216J08	TRANSISTOR	1	
Q4804	B1ABCF000104	TRANSISTOR	1	
Q4805	2SD2216J08	TRANSISTOR	1	
Q4805	B1ABCF000104	TRANSISTOR	1	
Q4807	2SD2216J08	TRANSISTOR	1	
Q4807	B1ABCF000104	TRANSISTOR	1	
Q4808	2SB1462J08	TRANSISTOR	1	
Q4808	B1ADCF000072	TRANSISTOR	1	
Q4809	2SB1462J08	TRANSISTOR	1	
Q4809	B1ADCF000072	TRANSISTOR	1	
Q4810	2SB1462J08	TRANSISTOR	1	
Q4810	B1ADCF000072	TRANSISTOR	1	
Q4811	2SD2216J08	TRANSISTOR	1	
Q4811	B1ABCF000104	TRANSISTOR	1	
R4802	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R4803	ERJ3GEYG102	M.RESISTOR CH 1/16W 1K	1	
R4804	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R4805	ERJ3GEYJ331	M.RESISTOR CH 1/16W 330	1	
R4806	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R4807	ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R4808	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R4809	D0HB154ZA002	M.RESISTOR CH 1/16W 150K	1	

Components identified with the mark ⚠ have the special characterisitics for safety.
When replacing any of these components, use onlly the same type.

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R4810	D0HB563ZA002	M.RESISTOR CH 1/16W 56K	1	
R4811	ERJ3GEYJ271	M.RESISTOR CH 1/16W 270	1	
R4814	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R4815	D0HB154ZA002	M.RESISTOR CH 1/16W 150K	1	
R4816	D0HB563ZA002	M.RESISTOR CH 1/16W 56K	1	
R4817	ERJ3GEYJ271	M.RESISTOR CH 1/16W 270	1	
R4818,19	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	2	
R4820,21	ERJ3GEYG472	M.RESISTOR CH 1/16W 4.7K	2	
R4826	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R4827	ERJ3GEYG152	M.RESISTOR CH 1/16W 1.5K	1	
R4828-30	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	3	
		MISCELLANEOUS		
	LSMA0682	ESD ANGLE	1	
■ E60	LSEP8178B1	LIQUID CRYSTAL DSP C.B.A.	1	
C8001	ECJ2YB1C474K	C.CAPACITOR CH 16V 0.47U	1	
C8002-04	ECJ1VB1A105K	C.CAPACITOR CH 10V 1U	3	
C8005	ECST0JY226	T.CAPACITOR CH6.3V 22U	1	
C8006	ECJ1VB1H103K	C.CAPACITOR CH 50V 0.01U	1	
C8007	ECST1CY475	T.CAPACITOR CH 16V 4.7U	1	
C8008	ECJ1VB1C104K	C.CAPACITOR CH 16V 0.1U	1	
C8009	ECJ2YF1C225Z	C.CAPACITOR CH 50V 2.2U	1	
C8010	ECST0JY106	T.CAPACITOR CH6.3V 10U	1	
C8011,12	ECJ2YF1C225Z	C.CAPACITOR CH 50V 2.2U	2	
C8013	ECJ1VB1H152K	C.CAPACITOR CH 50V 1500P	1	
C8014	ECJ2YB0J225K	C.CAPACITOR CH6.3V 2.2U	1	
C8015	ECJ2YF1C225Z	C.CAPACITOR CH 50V 2.2U	1	
C8016	F1K1C2250005	C.CAPACITOR CH 16V 2.2U	1	
C8019	ECJ1VB1C104K	C.CAPACITOR CH 16V 0.1U	1	
C8020	ECJ2YF1C225Z	C.CAPACITOR CH 50V 2.2U	1	
C8107	ECUX1A106KBP	C.CAPACITOR CH 10V 10U	1	
C8108	ECHU1H273JB5	P.CAPACITOR 50V 0.027U	1	
C8109,10	LSCUCAD150J	C.CAPACITOR CH 2KV 15P	2	
C8113	ECJ1VB1C104K	C.CAPACITOR CH 16V 0.1U	1	
C8114	ECUX0J105KBV	C.CAPACITOR CH6.3V 1U	1	
C8115	ECST0JY106	T.CAPACITOR CH6.3V 10U	1	
C8116	ECJ1VF1C104Z	C.CAPACITOR CH 16V 0.1U	1	
C8117	F1J1C1050011	C.CAPACITOR CH 16V 1U	1	
C8118	ECJ1VF1C104Z	C.CAPACITOR CH 16V 0.1U	1	
D8001	MAZ80680LL	DIODE	1	
D8101	MA3J741E0L	DIODE	1	
FP8001	K1MN25B00048	CONNECTOR	1	
FP8002	K1MN24B00077	CONNECTOR	1	
IC8001	AN2540FHQ-V	IC	1	
L8001-05	G1C150J00005	COIL 15UH	5	
L8103	G1C680M00005	COIL 68UH	1	
L8104	G1A100ZA0002	COIL 10UH	1	
⚠ PR8101	K5H1022A0008	FUSE	1	
Q8001	DTC124EUA106	TRANSISTOR	1	B1GBCFLL0012
Q8001	UN5212	TRANSISTOR-RESISTOR	1	
Q8002	2SB1462J08	TRANSISTOR	1	
Q8002	B1ADCF000072	TRANSISTOR	1	
Q8003	DTC124EUA106	TRANSISTOR	1	B1GBCFLL0012
Q8003	UN5212	TRANSISTOR-RESISTOR	1	
Q8004	2SB1462J08	TRANSISTOR	1	
Q8004	B1ADCF000072	TRANSISTOR	1	
Q8005	2SD1819A0L	TRANSISTOR	1	
Q8005	B1ABCF000020	TRANSISTOR	1	
Q8006	2SD1819A0L	TRANSISTOR	1	
Q8006	B1ABCF000020	TRANSISTOR	1	
Q8007	DTC124EUA106	TRANSISTOR	1	B1GBCFLL0012

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
Q8007	UN5212	TRANSISTOR-RESISTOR	1	
Q8008	2SB1462J08	TRANSISTOR	1	
Q8008	B1ADCF000072	TRANSISTOR	1	
Q8009	2SD1819A0L	TRANSISTOR	1	
Q8009	B1ABCF000020	TRANSISTOR	1	
Q8010	B1GDCFJN0011	TRANSISTOR	1	
Q8010	UNR511400L	TRANSISTOR-RESISTOR	1	
Q8011	DTC124EUA106	TRANSISTOR	1	B1GBCFLL0012
Q8011	UN5212	TRANSISTOR-RESISTOR	1	
Q8012	XP0450100L	TRANSISTOR	1	
Q8104	2SD11190RL	TRANSISTOR	1	
Q8104	B1ABPC000007	TRANSISTOR	1	
Q8014	XP0440100L	TRANSISTOR	1	
Q8016,17	XP0450100L	TRANSISTOR	2	
Q8105	2SD11190RL	TRANSISTOR	1	
Q8105	B1ABPC000007	TRANSISTOR	1	
Q8106	2SD1819A0L	TRANSISTOR	1	
Q8106	B1ABCF000020	TRANSISTOR	1	
Q8107	2SD1819A0L	TRANSISTOR	1	
Q8107	B1ABCF000020	TRANSISTOR	1	
R8001	ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R8003	ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R8004-06	ERJ3GEYG102	M.RESISTOR CH 1/16W 1K	3	
R8007	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R8008-13	ERJ3GEYG102	M.RESISTOR CH 1/16W 1K	6	
R8014	ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R8016	ERJ3GEYG472	M.RESISTOR CH 1/16W 4.7K	1	
R8017	ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R8019	ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R8021	ERJ3GEYG102	M.RESISTOR CH 1/16W 1K	1	
R8022	ERJ3GEYJ562	M.RESISTOR CH 1/16W 5.6K	1	
R8024	ERJ3GEYG682	M.RESISTOR CH 1/16W 6.8K	1	
R8025	ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R8027-29	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	3	
R8031,32	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	2	
R8034-36	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	3	
R8037	ERJ3GEYG102	M.RESISTOR CH 1/16W 1K	1	
R8038,39	ERJ3GEYJ393	M.RESISTOR CH 1/16W 39K	2	
R8040	ERJ3GEYG102	M.RESISTOR CH 1/16W 1K	1	
R8046,47	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	2	
R8049	ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R8050,51	ERJ3GEYJ393	M.RESISTOR CH 1/16W 39K	2	
R8052,53	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	2	
R8054	ERJ3GEYJ244	M.RESISTOR CH 1/16W 240K	1	
R8055	ERJ3GEYJ184	M.RESISTOR CH 1/16W 180K	1	
R8104	ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R8105,06	ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	2	
R8108	ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R8109-11	ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	3	
T8101	ETJ11K121AM	TRANSFORMER	1	
		MISCELLANEOUS		
	VMZW0660	INSULATION SHEET	1	

SECTION 1

SERVICE NOTES

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1.1. SERVICE NOTES INF-1

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1 SERVICE NOTES (PLEASE READ)

1.1. SERVICE NOTES

1.1.1. EXTENSION CABLES FOR SERVICE POSITION

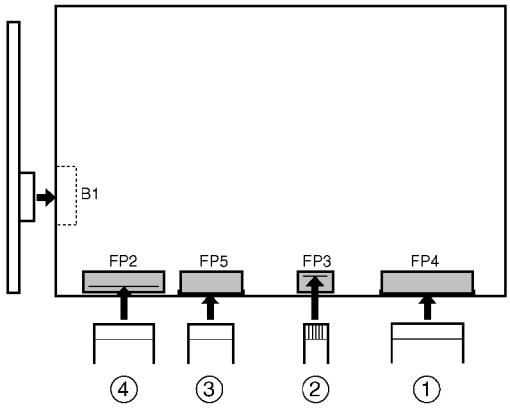
Using the following Extension Cables, place the unit as shown for check and service.

Extension Cables (No.1 ~ No.4) are used for improving serviceability. (They are not necessarily used.)

NO.	PART NUMBER	PART NAME	CONNECTION
①	LSUA0017	18Pin Extension Cable	FP4 on Main C.B.A. ~ Capstan F.P.C. on Mechanism Chassis Ass'y
②	LSUA0016	10Pin Extension Cable	FP3 on Main C.B.A. ~ Cylinder F.P.C. on Mechanism Chassis Ass'y
③	VUVS0007	12Pin Extension Cable	FP5 on Main C.B.A. ~ Head Amp F.P.C. on Mechanism Chassis Ass'y
④	VUVS0015	28Pin Extension Cable	FP2 on Main C.B.A. ~ Mechanism F.P.C. on Mechanism Chassis Ass'y

Note :

1. The LCD open/close SW. is for changing between LCD Display or EVF Display. When turning on LCD Display, place some paper or tape, etc. on LCD open/close SW. so that this SW. stays ON.
2. Connect the F.P.C.s to the connectors, verifying the direction of F.P.C. as shown.
3. Use extreme care when unplugging or plugging in connectors.



Main C.B.A. (component side)

Fig. 1-1

1.1.2. SIMPLIFIED FAULT FINDING DATA (SELF-DIAGNOSTIC SYSTEM)

When following conditions occur, the Power LED will flash according to the condition.

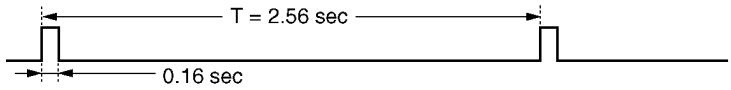
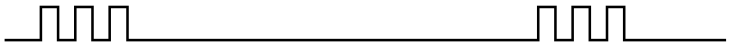
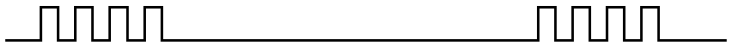
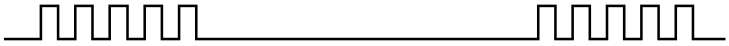
CONDITION	POWER LED FLASHING TIMING & POWER OFF TIMING
T-Reel Lock	After 1 minute flash, power will be turned off. 
S-Reel Lock	After 1 minute flash, power will be turned off.
Unloading Lock	After 1 minute flash, power will be turned off. 
Loading Lock	After 1 minute flash, power will be turned off. 
Cylinder Lock	After 1 minute flash, power will be turned off. 
Focus Motor Lock	Power LED flashes at 1 Hz timing.
Zoom Motor Lock	Power LED flashes at 1 Hz timing.
Dew Detection	After 18 seconds flash at 1 Hz timing, power will be turned off.

Fig. 2-1

(For model with SD/MMC Slot)

If any of the following numbers appear on-screen, the palmcorder may need service. Do not remove the battery (if attached) and write down the displayed number.

Error No.	Error Description
U11	Card Error
U12	Card Error
U14	Card/Camcorder Dialogue Error
U15	Card Access Error
U16	Card Access Error
U30	Error other than above

Fig. 2-2

Note:

While battery remains, the Error No. will be displayed again when the power is switched off and on again. (Once the Battery is removed or dead, Error No. will not remain in the memory.)

1.1.3. METHOD FOR LOADING/UNLOADING OF MECHANISM

CAUTION:

If loading does not start after DC Power Supply is applied, DO NOT continue to applying DC Power Supply.

Apply +3 VDC Power Supply to the Loading Motor terminals.

Loading:

DC (-) to Portion "a," DC (+) to Portion "b"

Unloading:

DC (+) to Portion "a," DC (-) to Portion "b"

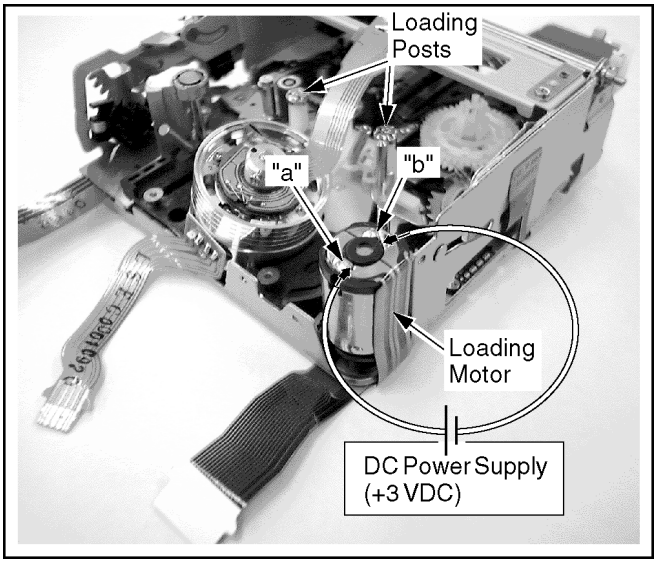


Fig. 4

1.1.4. METHOD FOR EJECTING WITH POWER OFF

CAUTION:

Make sure that a cassette tape is not in when this method is used, or a cassette tape will be damaged. When a cassette tape is jammed, DO NOT eject manually. Refer to "HOW TO REMOVE A JAMMED TAPE."

1. Insert the Pin or Straightened Paper Clip into the hole on the Cassette Cover.
2. Slide the Lock Lever of Mechanism Chassis Ass´y.
3. The Cassette Cover will open. (Eject)

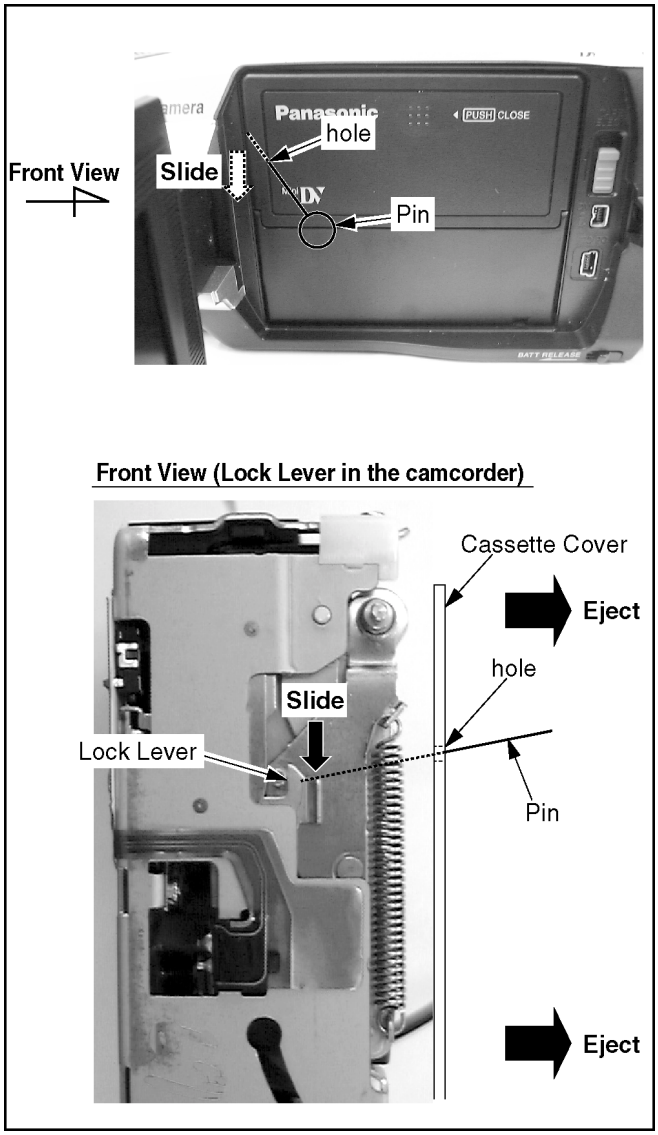


Fig. 5

1.1.5. HOW TO REMOVE A JAMMED TAPE

Remove a jammed tape in Electrical Method as follows:

1. Remove the Cabinet Parts. Then, remove the 3 Screws and the Mechanism Base Unit from the Mechanism Chassis Ass´y as shown. Refer to "CABINET SECTION" & "MECHANISM SECTION" in DISASSEMBLY/ASSEMBLY PROCEDURES.
2. Apply +3 V DC Power Supply to the Portion "a" and "b" on the Mechanism F.P.C. Unit.

   Note:

   DO NOT let eject the Garage Unit with grasping the Cassette Cover. If the Garage Unit is in the up position, a cassette tape may be damaged.

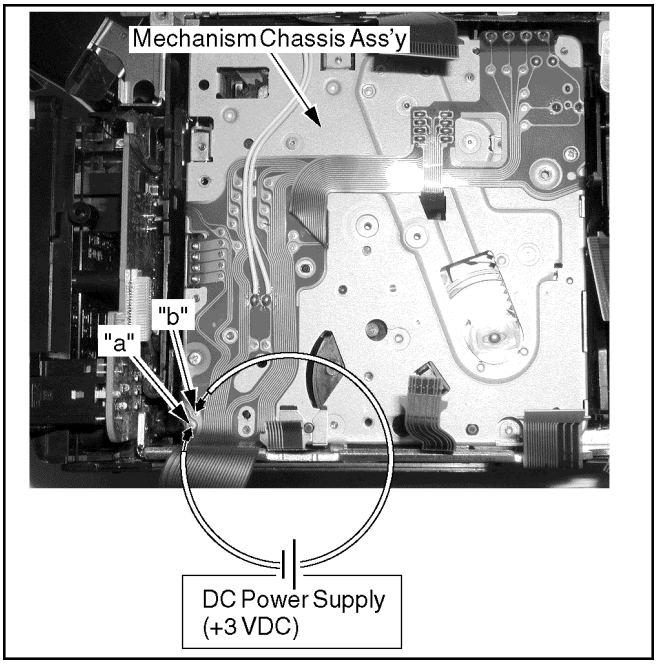


Fig. 5-1

3. When the Mechanism is in EJECT position (snapped sound), remove the Power Supply immediately.
4. Rewind the tape into a cassette tape by turning the Capstan Rotor clockwise with grasping the Cassette Cover.

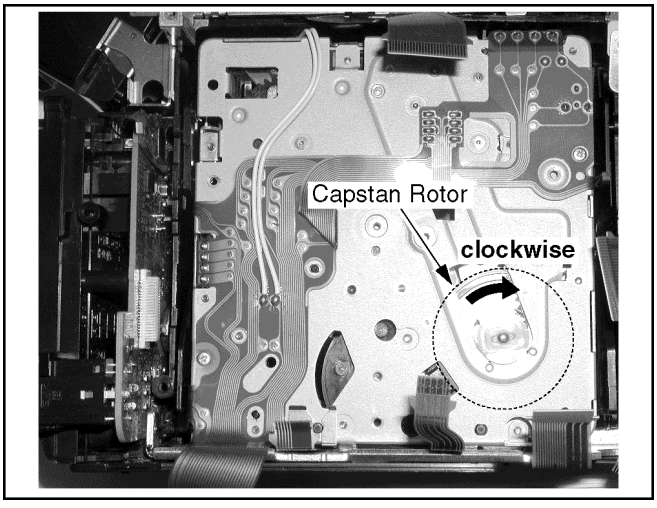


Fig. 5-2

5. Take out a cassette tape from the Garage Unit.

1.1.6. EEPROM DATA

CAUTION:

Be sure to save the EEPROM data using PC-EVR Adjustment Program before service and adjustment in order to make sure to avoid an accidental data loss, etc. as follows. Refer to "SET UP OF PC-EVR ADJUSTMENT PROGRAM" in ELECTRICAL ADJUSTMENT.

EEPROM IC

C.B.A.	EEPROM IC Ref. No.
Main C.B.A.	IC6007

1.How to save the EEPROM data to your PC

1. Start up the PC-EVR Adjustment Program.
2. Select "3. Read (Save)/Write All EEPROM data." in Main menu, and then press "Enter" key.
3. Select "5. Save all EEPROM data." in Read (Save)/Write All EEPROM data menu, and then press "Enter" key.
4. Input the file name, and then press the "Enter" key. The data of EEPROM IC will be stored to your PC.

2.How to write the EEPROM data which was stored in your PC to EEPROM IC

1. Start up the PC-EVR Adjustment Program.
2. Select "3. Read (Save)/Write All EEPROM data." in Main menu, and then press "Enter" key.
3. Select "6. Writing from stored data files." in Read (Save)/Write All EEPROM data menu, and then press "Enter" key.
4. Input the saved file name, and then press "Enter" key. The data of EEPROM IC will be written in EEPROM IC.

3.How to initialize the EEPROM IC

When the Main C.B.A. is replaced, be sure to write the initial data to EEPROM IC. And adjust the camcorder.

1. Start up the PC-EVR Adjustment Program.
2. Select "3. Read (Save)/Write All EEPROM data." in Main menu, and then press "Enter" key.
3. Select "6. Writing from stored data files." in Read (Save)/Write All EEPROM data menu, and then press "Enter" key.
4. Input the saved file name, and then press "Enter" key. The data of EEPROM IC will be written in EEPROM IC.

   OR;

   Select "7. Writing of Initial data." and then press "Enter" key. And press "Enter" key once again.

4.How to input ID Number

The ID number is in the EEPROM.

There are two ways to write the data of EEPROM IC after replacing Main C.B.A. as follows:

- Selecting "6. Writing from stored data files," ID Number with stored data file will be written automatically.
- Selecting "7. Writing of initial data," ID Number needs to be input. There are two methods, "a" or "b," to input ID Number as follows.

a When writing ID Number from the saved data:

1. Select "3. Read (Save)/Write All EEPROM data." in Main menu, and then press "Enter" key.
2. Input the saved file name, and then press "Enter" key. ID Number will be written automatically.

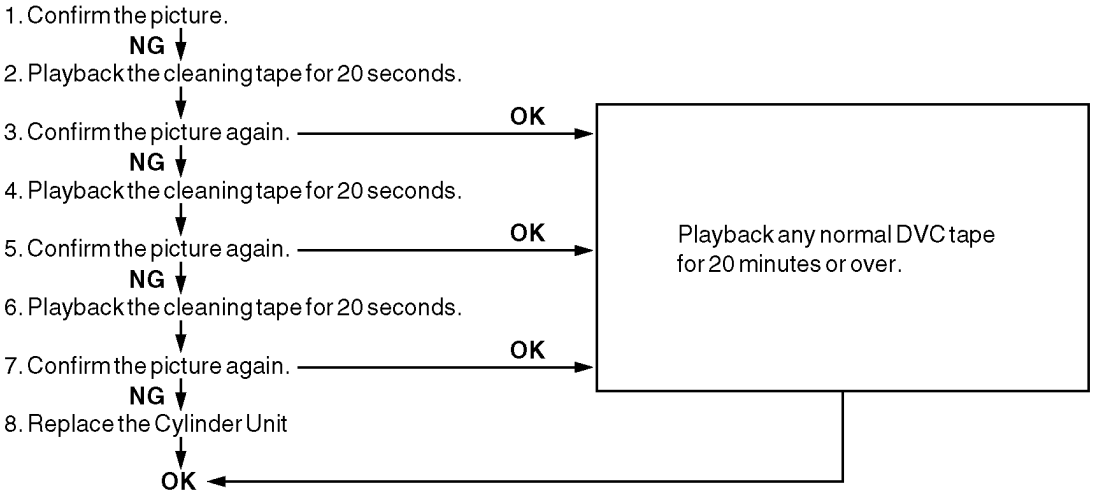
b When the original ID information can not be read because of destruction of EEPROM etc.:

1. Select "3. Read (Save)/Write All EEPROM data." in Main menu, and then press "Enter" key.
2. Select "8. Write ID from stored file." and then press "Enter" key. ID Number will be written automatically.

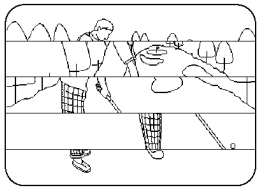
1.1.7. HOW TO USE THE DVC HEAD CLEANING TAPE / VFK1451

Please use the cleaning tape as described below.

Note: This cleaning tape has a total playback time of 2 minutes 30 seconds. it can be used 30 times.



The picture will look like this in case of clogged video head.



1.1.8. REPLACEMENT PROCEDURES FOR CSP (CHIP SIZE PACKAGE) IC

1.1.8.1. EQUIPMENT

1. Pre-Heater
2. Spot Heater
3. Vacuum Pick-up
4. P.C.B. Holder

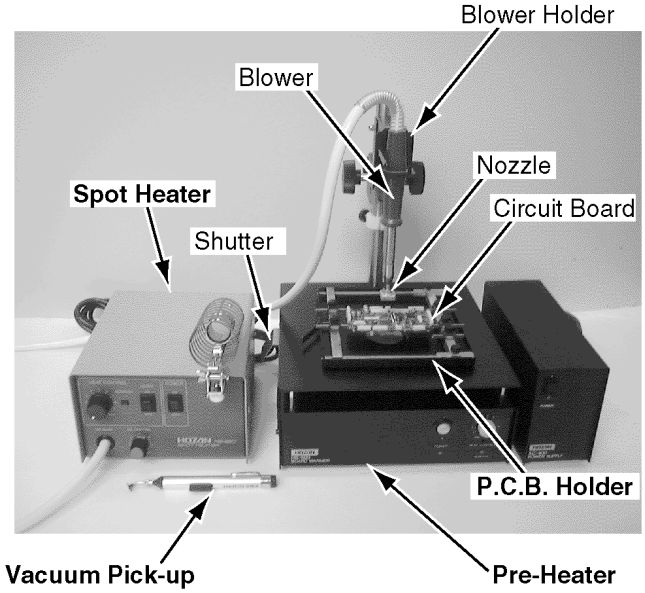


Fig. 8-1

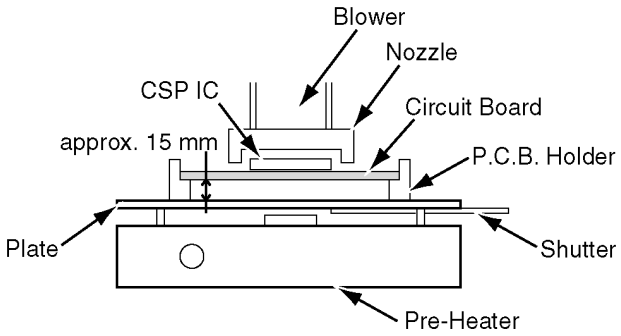
Fixture	Preparation for Fixture	Condition		Warming-up
		Heat Control Level	Air Control Level	
Spot Heater	Set a Nozzle to Blower of Spot Heater.	Level 8.5 (245 °C)	MAX	After setting fixtures, turn on the power. Then, wait for approx. 5 minutes to stabilize air condition. **Note:** Be sure to open the shutter of Pre-Heater.
Pre-Heater	Set the Blower to Blower Holder.	MAX (120 °C~150 °C)	---	
Reference for Temperature				

Fig. 8-2

1.1.8.2. REMOVAL OF CSP IC

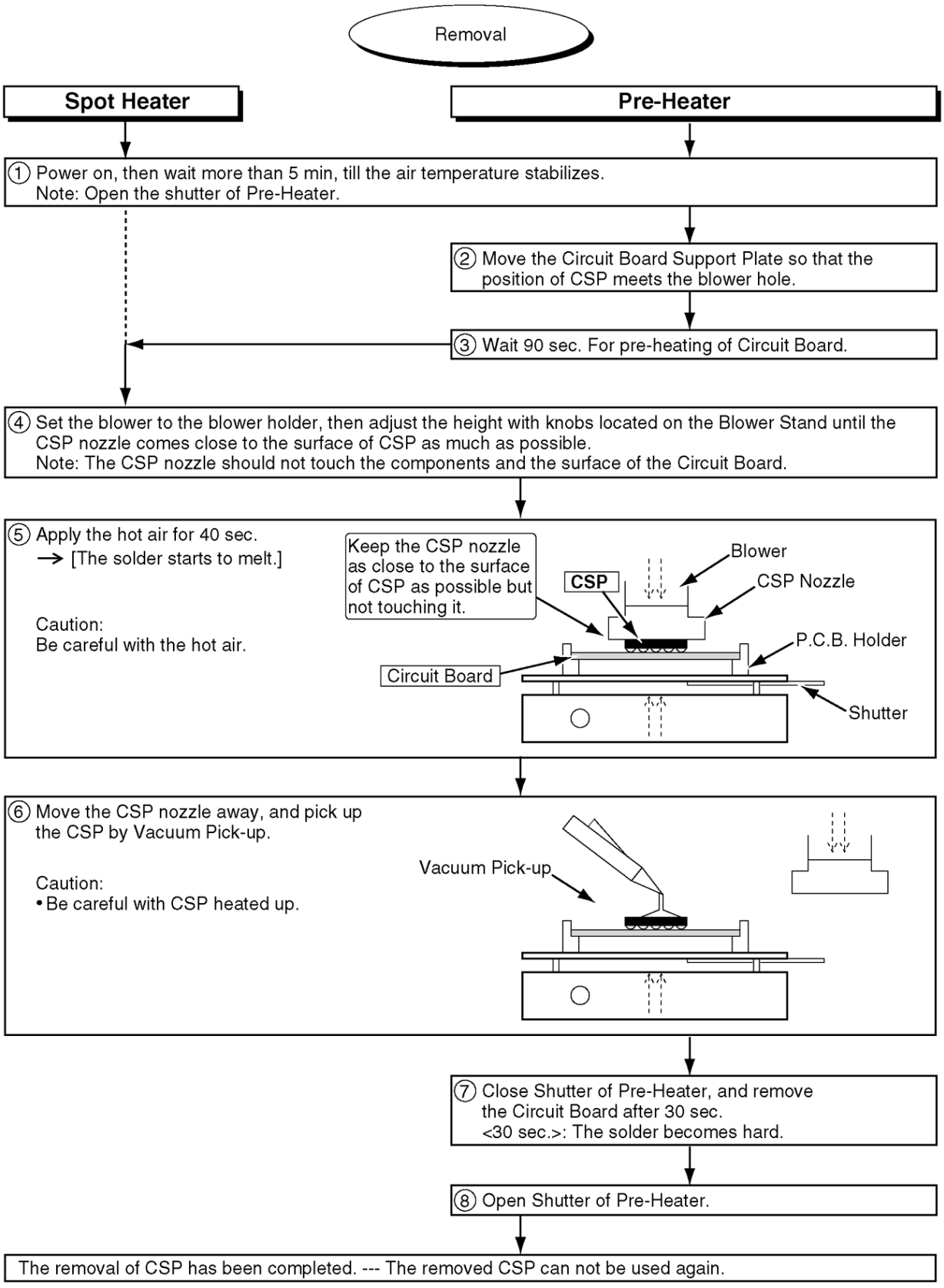

Removal
Spot Heater
Pre-Heater
① Power on, then wait more than 5 min, till the air temperature stabilizes.
Note: Open the shutter of Pre-Heater.
② Move the Circuit Board Support Plate so that the position of CSP meets the blower hole.
③ Wait 90 sec. For pre-heating of Circuit Board.
④ Set the blower to the blower holder, then adjust the height with knobs located on the Blower Stand until the CSP nozzle comes close to the surface of CSP as much as possible.
Note: The CSP nozzle should not touch the components and the surface of the Circuit Board.
⑤ Apply the hot air for 40 sec.
→ [The solder starts to melt.]
Caution:
Be careful with the hot air.
Keep the CSP nozzle as close to the surface of CSP as possible but not touching it.
Blower
CSP
CSP Nozzle
P.C.B. Holder
Circuit Board
Shutter
⑥ Move the CSP nozzle away, and pick up the CSP by Vacuum Pick-up.
Caution:
• Be careful with CSP heated up.
Vacuum Pick-up
⑦ Close Shutter of Pre-Heater, and remove the Circuit Board after 30 sec.
<30 sec.>: The solder becomes hard.
⑧ Open Shutter of Pre-Heater.
The removal of CSP has been completed. --- The removed CSP can not be used again.

Fig. 8-3

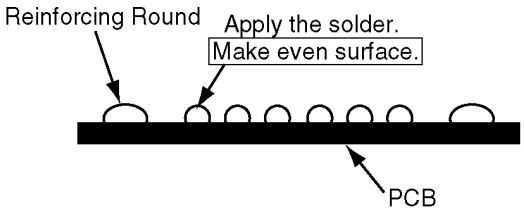
1.1.8.3. INSTALLATION OF CSP IC

Mounting of CSP

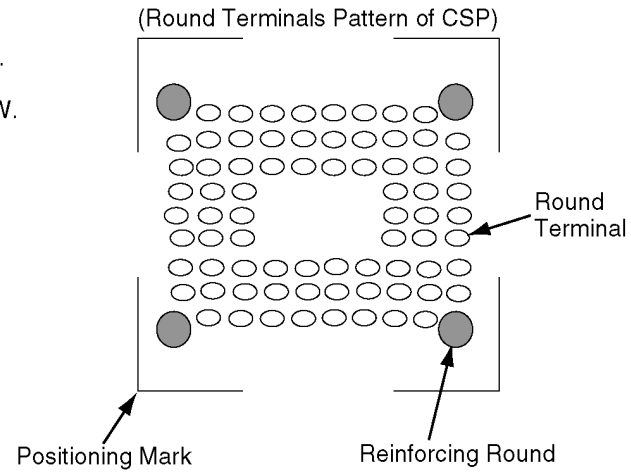
A. Cleaning

① **Applying the flux to the round terminal pattern.**
Apply the flux using an applicator, then tap it on round terminals.

② **Applying the solder to round terminals of PCB. --- [Using string solder]**
Apply the solder to the soldering iron, then move the soldering iron on the round terminals so that the solder evenly stays on the round terminals (Confirm with Loupe).
Note:
- The power of the soldering iron should be less than 30 W.
- Be sure to make all solders applied are the same in size and height.

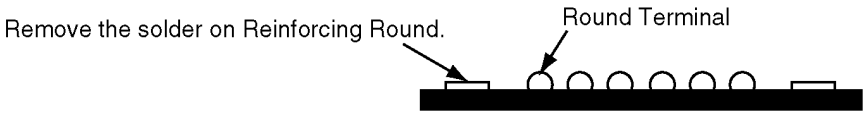


Caution:
- Do not touch the round terminals with the soldering iron. Otherwise, pattern may be damage.



Remark:
There are 2 types of CSPs. One of them is with Reinforcing Round, and the other one is without.

③ **For CSP with Reinforcing Round ⟶ Removing the solder on 4 corners (Reinforcing Rounds)**



④ **Cleaning of the round terminal pattern using an applicator with the cleaner (alcohol etc.).**

⑤ **Applying the flux to the round terminal pattern.**
Note: Do not let any dust get into the flux.

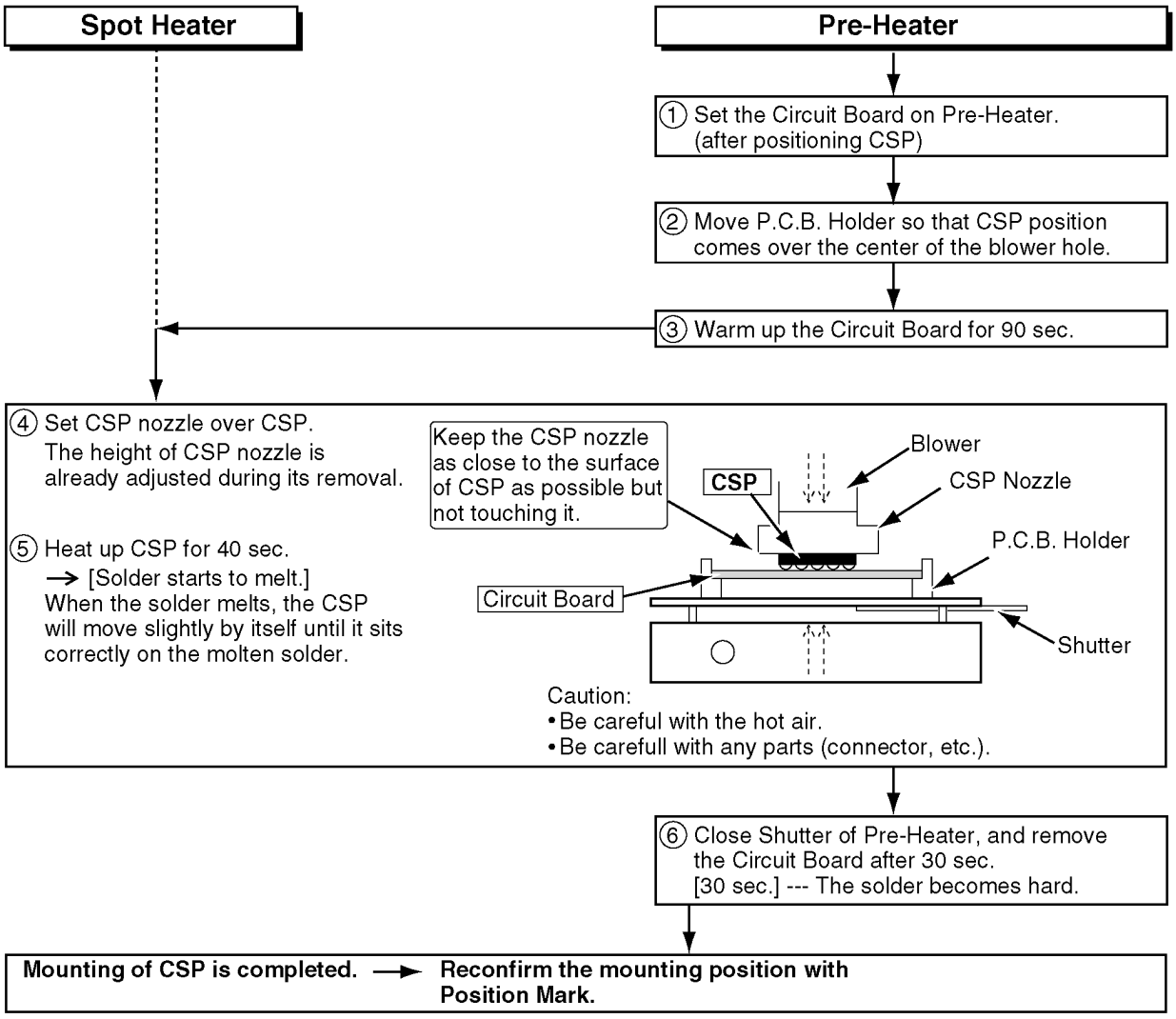
B. Positioning

⑥ **Check if there are solder on new CSP or not. If not, perform steps (1) ~ (4).**
Note: When applying the solder, do not touch the surface of CSP with the soldering iron.
(1) Apply enough flux to the CSP.
(2) Apply a small amount of the solder.
(3) Clean the flux once.
(4) Apply a small amount of flux to CSP.
Note: Do not apply too much the flux.

⑦ **Positioning of new CSP on the round terminal pattern.**
- Put CSP on the round terminal pattern so that 4 corners of CSP meet the positioning marks printed on PCB.

Fig. 8-4

C. Mounting


Spot Heater
Pre-Heater
① Set the Circuit Board on Pre-Heater. (after positioning CSP)
② Move P.C.B. Holder so that CSP position comes over the center of the blower hole.
③ Warm up the Circuit Board for 90 sec.
④ Set CSP nozzle over CSP.
The height of CSP nozzle is already adjusted during its removal.
⑤ Heat up CSP for 40 sec.
→ [Solder starts to melt.]
When the solder melts, the CSP will move slightly by itself until it sits correctly on the molten solder.
Keep the CSP nozzle as close to the surface of CSP as possible but not touching it.
CSP
Blower
CSP Nozzle
P.C.B. Holder
Circuit Board
Shutter
Caution:
• Be careful with the hot air.
• Be carefull with any parts (connector, etc.).
⑥ Close Shutter of Pre-Heater, and remove the Circuit Board after 30 sec.
[30 sec.] --- The solder becomes hard.
Mounting of CSP is completed. → Reconfirm the mounting position with Position Mark.

That's all for CSP repair, and the final confirmation if the repair work is OK or not should be made by assembling the repaired Circuit Board into the camera unit.

Fig. 8-5